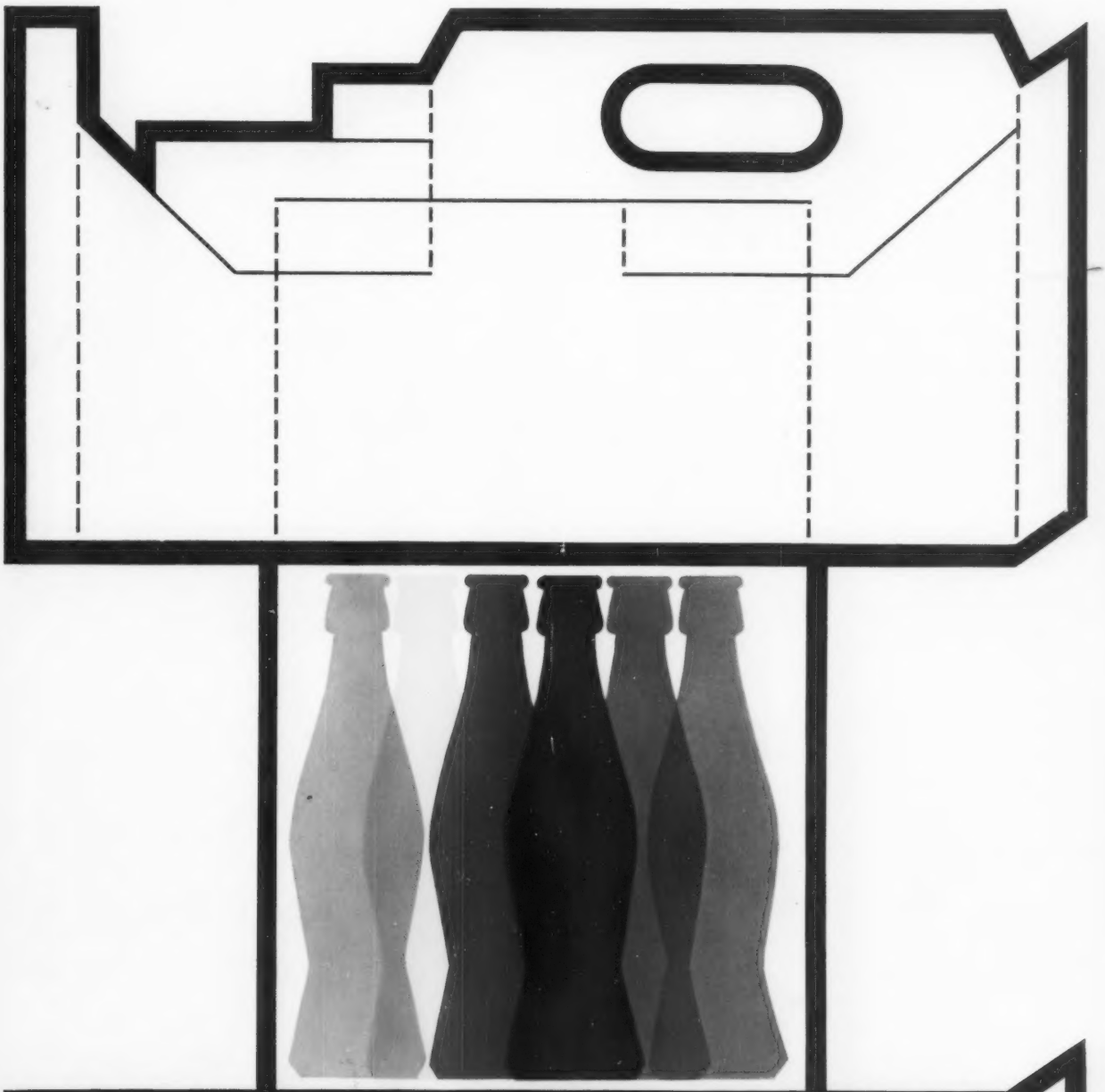
MODERN PACKAGING

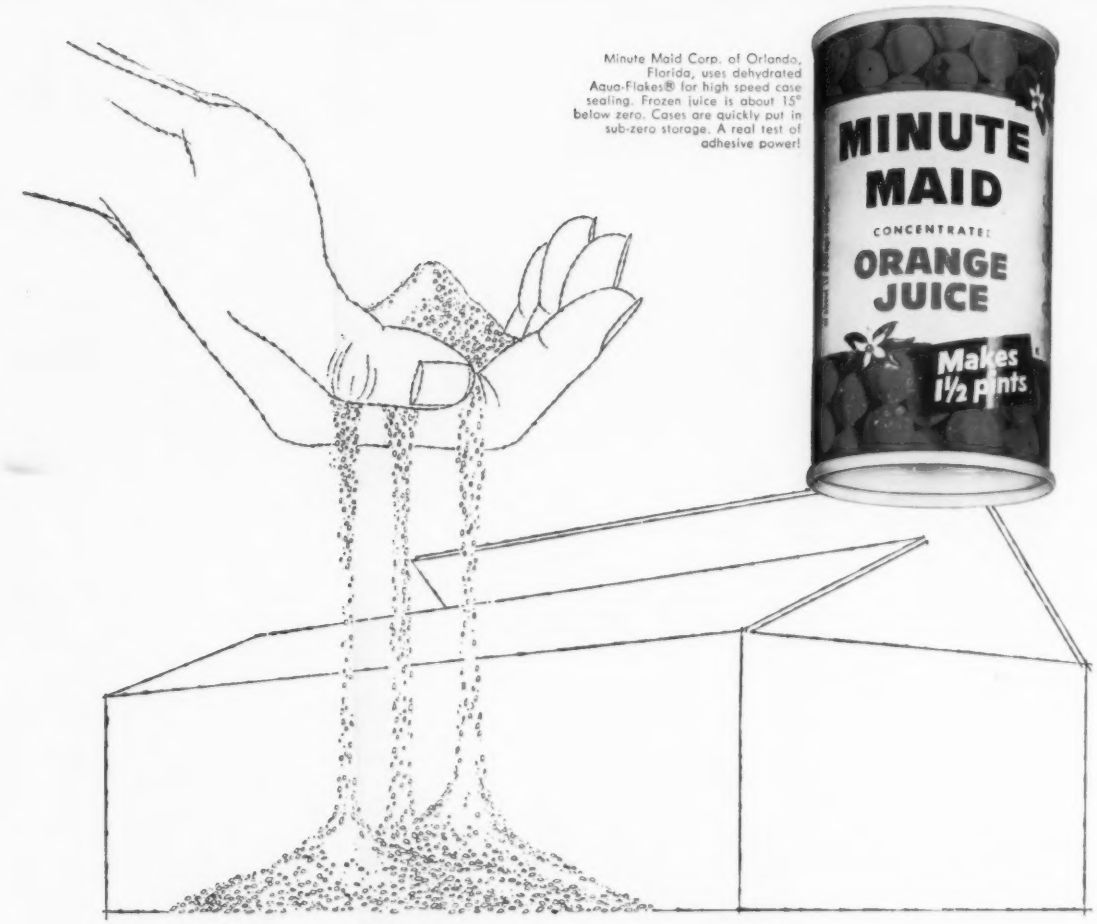
FEBRUARY 1960



GREAT PACKAGING DISCOVERIES: *The multipack*

Complete contents, pp. 2-3

Dehydrated Adhesive



Minute Maid Corp. of Orlando, Florida, uses dehydrated Aqua-Flakes® for high speed case sealing. Frozen juice is about 15° below zero. Cases are quickly put in sub-zero storage. A real test of adhesive power!

REDUCES CASE SEALING COSTS

Aqua-Flakes are high quality liquid glue that has been dehydrated. They give lowest possible cost wherever volume is large. Only the water has been removed. Only the water has to be replaced. Simply by mixing the flakes into water.

Aqua-Flakes eliminate the problems of old-fashioned cold water solubles and cookup dextrines. No lumping. No changing characteristics due to heating, cooking, storing. No evaporation and bodying up. No wasted batches.

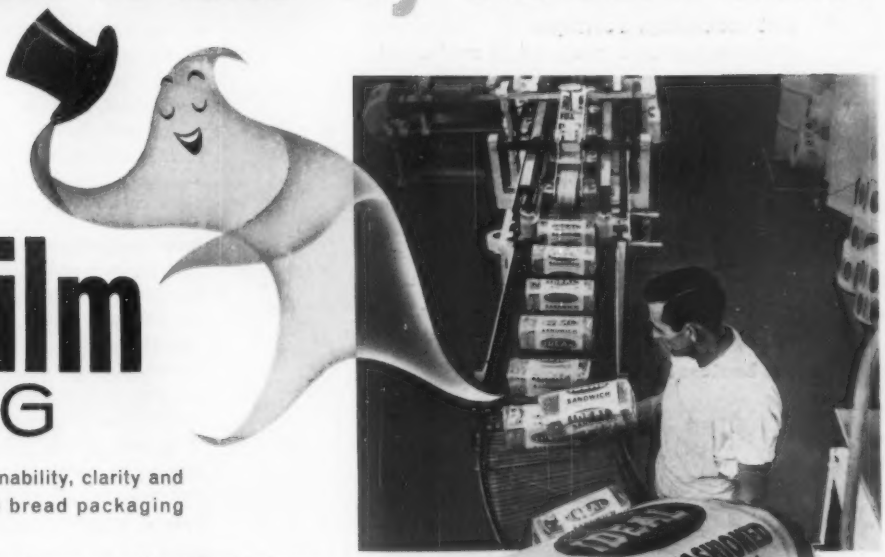
Aqua-Flakes film smoothly. Tack fast. Give excellent coverage. They are used in combining, laminating, heading and wrapping, tube winding, etc. Contact your nearest National office for information.

ADHESIVES DIVISION

National
STARCH and CHEMICAL
CORPORATION

750 Third Avenue, New York 17
3641 So. Washtenaw Ave., Chicago 32
735 Battery Street, San Francisco 11

Announcing: A GREAT NEW BREAD WRAP by GOODYEAR



Pliofilm 65 BG

brings excellent machinability, clarity and positive heat-seal to bread packaging

Now, for the first time, all the advantages of Goodyear's famous PLIOFILM are available for bread wrapping – in a special form called PLIOFILM 65 BG.

With this new film, specifically designed for bread and baked goods, you get:

Excellent machinability – in a wide range of sealing temperatures. Runs at maximum efficiency in any overwrap machine made to handle plastic type film.

Positive Seal—for maximum protection. Fresh bread *stays* fresh far longer.

Low Cost – PLIOFILM 65 BG actually costs less than comparable packaging films. Thanks to few rejects, PLIOFILM goes farther, too. Less overlap is needed for sealing—another important saving.

Clarity – for eye-catching display of product, as well as perfect visibility for your label.

In addition, PLIOFILM 65 BG prints beautifully, doesn't split or run. Whether your product is bread, bacon, textiles or anything that could benefit by packaging glamor and protection, you'd do well to consult a Goodyear Packaging Representative. Write: Goodyear, Packaging Films Dept. N-6418, Akron 16, Ohio.

Ideal bread by Ideal Baking Company, Huntsville, Alabama

Pliofilm

by GOODYEAR

Watch the award-winning Goodyear Theater on TV every other Monday evening

Pliofilm, a rubber hydrochloride – T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

FEBRUARY 1960 · VOL. 33 NO. 6

IN THIS ISSUE

77 **Gift packaging: a critique**
American packagers, pampered by mechanized efficiency and a wealth of ready-made props, appear to be losing sight of the vast potentials of distinctive gift packaging. In a tour of New York's leading department stores and specialty shops, MODERN PACKAGING found that gift packaging of American-made goods has taken on a monotonous sameness. By contrast, gift entries from abroad display sales-making sparkle and imagination. This article may help you think more creatively about an invaluable year-round sales tool.
General interest.

84 **The bantam aerosol**

Making significant headway in many product fields is the spray container you can carry in pocket or purse. Sales of the bantam (6 oz. or less) aerosol have increased 20 times since 1951, compared with a seven-fold gain for the standard 12-oz. size.
Special interest: foods, drugs, toiletries, toys, cosmetics, insecticides and deodorants.

87 **Sweden's leakproof carton**
Packagers of liquid or granular products will be interested in the wrapperless, linerless carton being used by Scandinavia's leading frozen-food packer. A liquid-tight, siftproof seal is achieved by heat sealing a rectangular sheet of thermoplastic-coated paper across each end of the container's interior and extending onto the four flaps. A fibrous tuft, formed when adjacent flaps are folded back during carton set-up, tightly plugs each corner as the cover paper is heat sealed.
Special interest: frozen, dry and liquid foods, chemicals, soaps, detergents.

96 **Now: polystyrene film for produce**
Two big commercial applications prove that bioriented polystyrene is a potent new entry in the field of low-cost, sealable, transparent wrapping materials. This film is running on automatic machinery to form crisp, clear overwraps for tray-packaged tomatoes. At Scafidi Tomato Co. (where the film is heat sealed) and at Safeway Stores (where it is solvent sealed), speeds are comparable with that achieved in conventional cellophane overwrapping.
Special interest: foods, all film packagers.

92 **Progress of a private brand**
First National Stores, a major Eastern supermarket chain, embarks on a sweeping redesign program to unite more than 600 labels into an appealing, instantly recognizable family. It is proof again that top-notch design is the private brand's biggest weapon in the shelf struggle with heavily advertised national competitors.
Special interest: supermarket and variety chains, foods, drugs, toiletries, cosmetics, soaps.

98 **Victory for radiation sterilization**
Adaptable to other areas of pharmaceutical packaging is the radiation-sterilization facility for volume processing of surgical sutures which has been developed by Ethicon, Inc. Electronic elements that destroy microorganisms inside a hermetically sealed package without the application of heat have been combined with high-speed foil pouch-packaging techniques. Result: a unique convenience packet that won for this company the Packaging Institute's 1959 Corporate Award.
Special interest: drugs, pharmaceuticals.

102 **The multipack**
A *Great Packaging Discovery*. The multipack, which in 1959 reached a volume of 3.5 billion units spread over the entire packaging field, was born

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"The uncommon European market."

MODERN PACKAGING, Executive and Editorial Offices, 575 Madison Ave., New York 22, N.Y. Phone PLaza 9-2710

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OF MODERN PACKAGING®

in 1924 as a convenience idea for bottled Coca-Cola. Cost and handling problems delayed its acceptance. But in 1935, development of a low-cost, one-trip paperboard carrier firmly established the multipack as a merchandising tool and paved the way to new applications and to improvements in the package and in loading machinery.
General interest.

108 **Tilt-fill to cut foaming**

Advanced ideas for handling glass containers are demonstrated in Bristol-Myers' new 300-per-min. rotary line for filling liquid roll-on deodorants. Key to doubled packaging speed is the filling head's unusual design. The unit tips bottles as they move under the nozzle so that the product stream flows smoothly down the container's inner wall without foaming.
Special interest: foods, beverages, deodorants, drugs, toiletries, soaps.

114 **Racing the F&DA deadline**
With only a month left until the date for compliance with the new Food Additives Amendment, Federal officials, packaging associations and suppliers are working hard to clear materials or work out time extensions. Much progress has been made. Some packaging chemicals have been or are being cleared. F&DA has outlined methods for applying for test extensions and has speeded the procedure for listing and clearing safe chemicals.
Special interest: foods, drugs.

116 **Continuous skin-type packaging**
Polyvinyl chloride's "memory" helps Beltx Corp. cut costs 10% in a continuous, high-speed skin-packaging operation that combines individual jigs with electronic sealing. Unlike conventional skin packaging, no vacuum is needed to pull the film tight. A continuous web of stretchable PVC is held under tension during the packaging operation. The tough film conforms to product contour after the package is heat sealed, thus eliminating the need to heat the entire film and board area.
Special interest: apparel, hardware, small parts, appliances, housewares.

TECHNICAL & ENGINEERING

123 **New data on film heat seals**
A special laboratory heat sealer has been built by the Swedish Institute for Food Preservation Research to study the factors influencing the heat-seal strength of plastic films for food packaging. The new unit permits accurate control of sealing temperature, dwell time and sealing pressure. Interchangeable jaws allow study of constant or impulse heat sealing. This report shows the results achieved in the heat sealing of polyvinyl chloride. *By Rolf Bosvik.*

130 **Fluorination of polyethylene**
To packagers of products in blow-molded plastic bottles, the technique of fluorination gives the promise of better container performance without excessive cost. A year-long study conducted by Plax Corp. researchers indicates that formation of a fluorinated surface on polyethylene sharply reduces the permeability and increases the chemical resistance of unlined molded bottles. Performance reportedly approaches that of the best available container-liner barriers. *By Jules Pinsky, A. Adakonis and A. R. Nielsen.*

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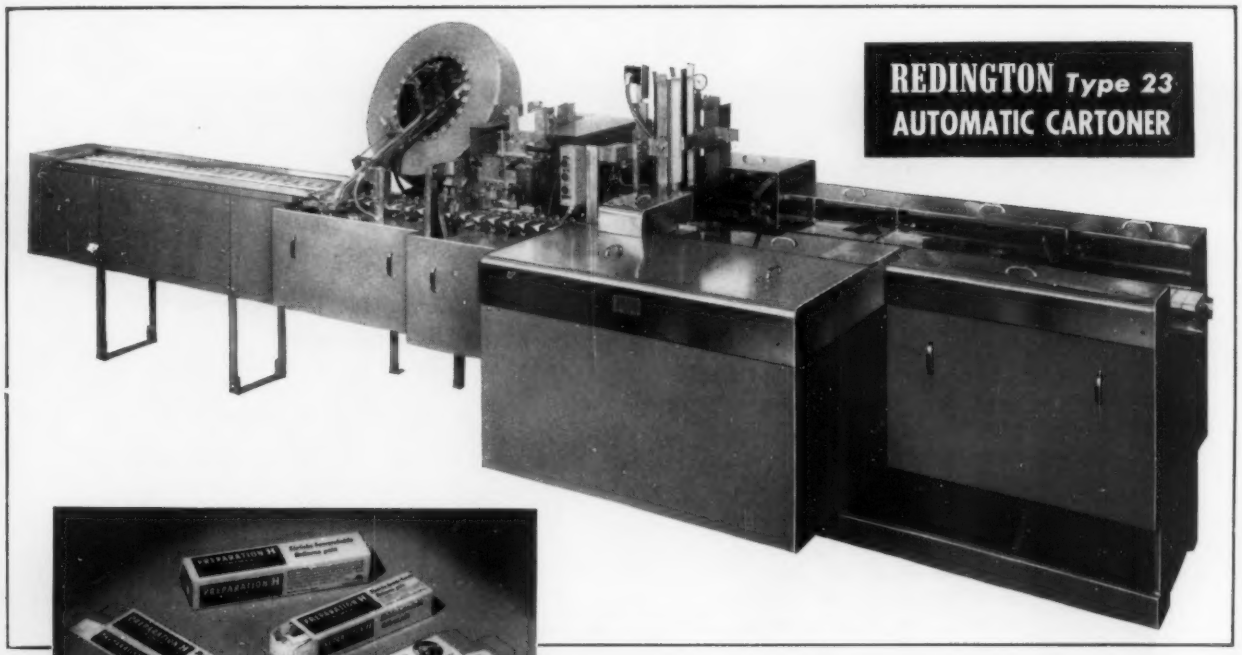
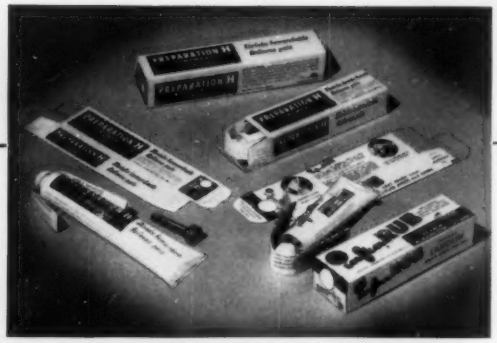




AUTOMATIC CARTONING CUTS LABOR COSTS . . .

Once tubes have been placed in conveyor pockets, the REDINGTON Type 23 handles all the rest of the packaging job automatically. An unfolded leaflet is fed from the magazine, folded three times parallel to the long dimension, then placed in the conveyor pocket over the top of the filled tube as it reaches the loading point. For "Preparation H," a special mechanism also feeds one pile pipe to each conveyor pocket.

Next, the REDINGTON feeds and forms a carton from the flat stack in the magazine, and inserts the whole assembly from the conveyor pocket; then it tucks in the end flaps to close the carton, and discharges it to packing table or conveyor.

It's highly important that no package of "Preparation H" reach the market without its accompanying pile pipe. A special REDINGTON device stops the machine should a pipe fail to feed to a unit assembly. Another detector prevents feeding a carton to any empty conveyor pocket.

SEND FOR THIS 44-PAGE ILLUSTRATED CATALOG

which describes many interesting machines for cartoning, wrapping and special packaging all kinds of products in many fields.

Different products . . . different sizes . . . different enclosures . . . all automatically cartoned with *one* REDINGTON!

Many lines—perhaps *your* line—include different package sizes, and different groups of articles which must be cartoned. But this doesn't mean that you can't have the production-boosting, cost-reducing advantages of *fully automatic cartoning*—not if you have the right REDINGTON working for you.

The machine illustrated is an excellent example of what we mean. Whitehall Laboratories Inc., Elkhart, Indiana, require large volume production on two different cartoned products. On one line, their "Preparation H" ointment is cartoned in 1 oz. and 2 oz. sizes, "Infra Rub" in a 1½ oz. package. Both products are packaged in tubes, accompanied by leaflets; "Preparation H" cartons also include plastic pile pipes.

This means plenty of variables to contend with—yet Whitehall's REDINGTON Type 23 permits *fully automatic cartoning* of all items on this one machine, with production speeds up to 150 packages a minute! What's more, changeover of the machine for the different carton sizes or from one item to the other is simple, and requires minimum downtime.

Whatever *you* package in cartons—and whatever variations *your* line includes—it will pay you to get the facts about the advantages REDINGTON Automatic Cartoning offers you in terms of steady, volume production with a minimum of direct labor cost. For more than six decades, REDINGTONS have been giving profitable, high-efficiency performance to packagers—both large and small—in many lines. They are built to exacting specifications, with never a compromise on materials or workmanship, to assure a long productive life even under hard-use conditions.

Why not call in experienced REDINGTON engineers *now*, to discuss how you can get better, more profitable package production?

F. B. REDINGTON CO.
3010 ST. CHARLES ROAD, BELLWOOD, ILLINOIS
Chicago Phone: AUstin 7-4200

Verona, New Jersey . . CEnter 9-4608

REDINGTON
AUTOMATIC MACHINES for CARTONING
WRAPPING • SPECIAL PACKAGING

Rugged, long-lasting protection and ease of filling have made DURAFILM the preferred packaging medium for Rose's Canadian Bacon and Rose's flavor-loving customers.

packages for performance

DOBECKMUN

Dobeckmun Durafilm packaging exploits the appetizing look that helps win food sales at point of purchase and, at the same time, protects the flavor and freshness that builds brand loyalty at point of serving. Tough, durable, and moisture-proof DURAFILM, is heat-sealing and highly economical for use with packaging equipment. Available either plain or printed, Durafilm is engineered to the selling specifications of meats, fish, frozen food, cheese and liquids. Sell your product... and keep it sold with packaging for performance by THE DOBECKMUN COMPANY, A Division of The Dow Chemical Company, Cleveland 1, Ohio • Berkeley 10, California • Offices in most principal cities.

Another FOIL packaging success with ANACONDA ALUMINUM . . .

Bright new Kraft Oil labels go glamorous with ANACONDA ALUMINUM FOIL

This sparkling new label, designed to effectively use the reflective qualities of aluminum foil, gives **Kraft Foods Division,** National Dairy Products Corporation, a stand-out package on busy supermarket shelves.

From the distinctive bold lettering against a brilliant white background to the appetizing reproduction of golden fried chicken, this label is designed to sell hard. **Art Directors Service, Inc.,** Chicago, designed this new label for Kraft Foods. It was gravure printed by **United States Printing & Lithograph,** Division of Diamond National Corporation, on laminated foil from **Anaconda Aluminum.**

Find out how foil can brighten your product's sales future by calling your nearby Anaconda Aluminum representative. And for more information about all our products and facilities, send for our new booklet, "*This is Anaconda Aluminum*". Write Dept. ML-2, Louisville 1, Ky.

When you buy foil for packaging or printing, remember . . . every industry has one member who specializes in customer satisfaction

ANACONDA ALUMINUM

ANACONDA ALUMINUM COMPANY • GENERAL OFFICES, LOUISVILLE, KENTUCKY

Want to pack hard-to-hold high-pressure products?

or fragile but corrosive ones?

Count on Crown Spra-Tainers

Hard-to-hold high-pressure products like propane gas are safely packed in seamless 12-ounce Spra-Tainers. Fragile pharmaceuticals and fragrant cosmetics, containing corrosive ingredients, require the perfect corrosion-resistant internal coating of the Crown Spra-Tainer. Your aerosol product—whatever it may be—deserves a Crown container. Crown—pioneer and largest producer of aerosol cans, will be glad to help you. May we discuss aerosol packing with you?

CROWN
for cans · crowns · closures · machinery

CROWN CORK & SEAL COMPANY, INC., 9300 Ashton Road, Philadelphia 36, Pa.

Just Between You and Your Customer

Transparency is beautiful, to be sure. But to convert casual tasters into faithful customers, your package must also provide sure product protection . . . protection that never lets the customer down.

Whatever you want . . . transparency or opacity; flexibility or rigidity; moisture retention or moisture prevention . . . you will find a Riegel material to meet your requirements. More than 600 different kinds to choose from: pouch papers, paperboards, glassines, foils, films and laminations . . . waxed, plastic coated, printed or plain . . . tailor-made to your needs.

For technical advice or samples, write to Riegel Paper Corporation, 260 Madison Avenue, New York 16, N. Y.

Riegel

PROTECTIVE PACKAGING MATERIALS

Peak Nut Co. uses Riegel POLYFANE™ to protect its tantalizing products while they display themselves at point-of-sale. Pouches are formed, filled and heat-sealed at high-speed on Lynch equipment.

There's a fast-growing market for your product...

To help you increase your share of this growing market, CANCO offers the broadest aerosol experience, plus the most complete line of containers in the industry!

In 1959, 530,000,000 pressure cans were used to package products such as shaving lather, shampoo, tooth paste, dessert topping, hair spray, hand lotion, car polish, paint and insecticide.

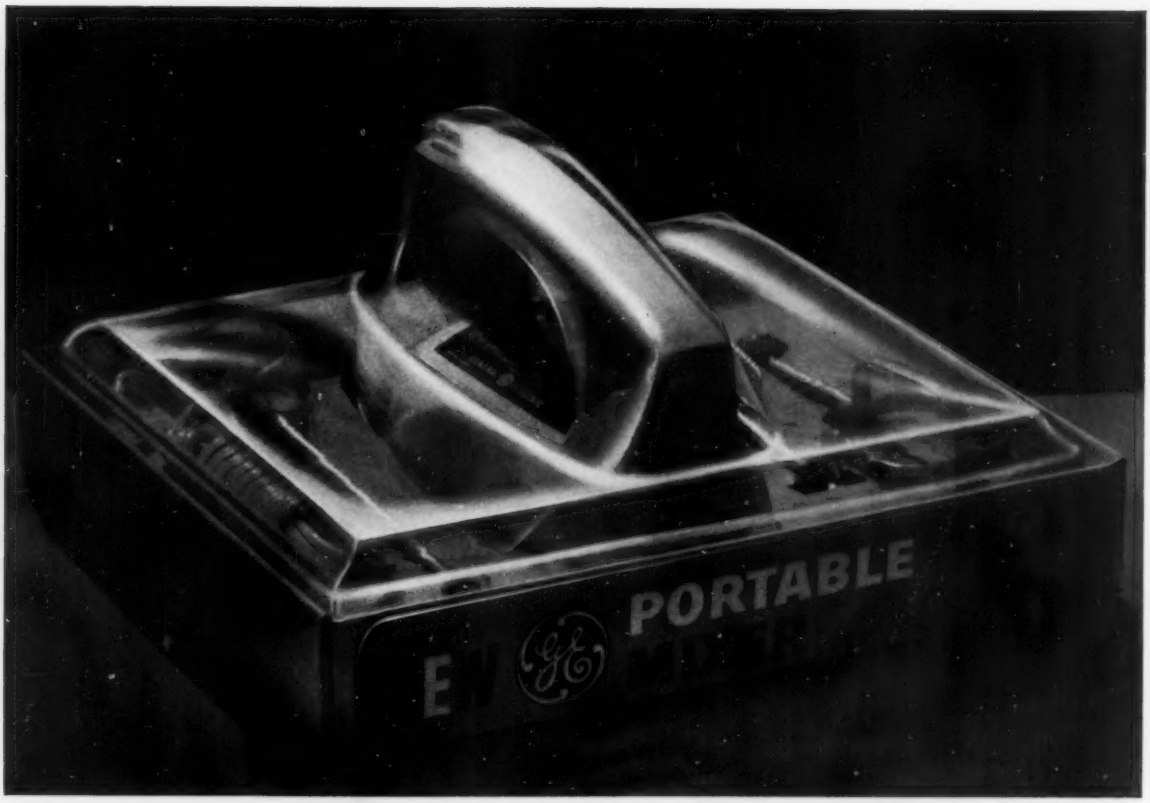
That's a big market. And it's getting bigger. Now is the time for you to explore this opportunity with Canco! *Whatever you pack*—remember these important facts:

- Canco offers the largest selection of pressure cans.
- Canco pressure cans have the strongest sideseam construction made.

For more information, call your Canco salesman today.

CANCO Division AMERICAN CAN COMPANY

New York • Chicago
New Orleans • San Francisco



Acetate Sheeting

by **JOSEPH DAVIS PLASTICS CO.** makes an unbeatable package for the new General Electric Portable Mixer. The unusual Coverplax® blister pack was thermo-formed by **Plaxall, Inc.,** Long Island City, N. Y., using crystal clear JODA acetate, a material selected by General Electric after exhaustive tests. The sparkling clarity of JODA allows the product's smart design and clever construction to be seen plainly—its use upgrades the packaging.

JODA extruded acetate sheets, rolls and film in all gauges — transparent, translucent or opaque — are excellent for vacuum forming. Why not investigate the advantages of JODA acetate and see for yourself how it can help solve your packaging problems?

JOSEPH DAVIS PLASTICS CO.

430 Schuyler Ave.
Kearny, N. J.

Phone
WYman 1-0980
N. Y. BArclay 7-6421

Attractive new decanter saves space

This handsome glass container from Armstrong is ideal for spotlighting the rich, appetizing color of vegetable juice cocktail.

On the shelf, it attracts the shopper's eye with its trim, modern design. The handy square shape takes up less space—in the store and in the home refrigerator. The jar can be used for leftover juice, too—it's re-sealable. You'll find a glass package that's exactly right for your product at: Armstrong Cork Company, Lancaster, Pennsylvania.

Armstrong PACKAGING

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

Want more profit from your Packaging Operations?

. . . without replacing present equipment, or building a new plant, or even hiring new people!

• Check your adhesive. That's where some profit opportunity lies. Because the adhesive is one of the controls that govern your rate of production. And production is profit. Obviously, the more production you can get from your present packaging setup, the more profit you will earn.

Therefore, the speed, machine-ability and tack of your adhesive are vital. Your adhesive must do much more than just "adhere".

Swift's new high speed resin adhesives have stronger tack with better machine-ability. And what's more, they have higher strength and greater resistance to moisture as well! Swift's 23 adhesives plants produce a complete line of packaging adhesives for the most specific applications—prompt, courteous, *and* authoritative service throughout the United States and Canada.

Be sure *your* packaging adhesive *is* helping your profit. Call your Swift Adhesive Specialist for all your adhesives. Or write for additional details to Swift & Company, Adhesive Products Department, Chicago 9, Illinois.

To Serve Your Industry Better

WITH THESE ADHESIVE PRODUCTS

RESINS AND RUBBERS IN EMULSION OR SOLVENT
DRY, LIQUID AND FLEXIBLE ANIMAL GLUES •
LIQUID DEXTRIN ADHESIVES

A-53-R

Swift

105TH YEAR

ABOVE . . . FINE PRODUCTS OF STANDARD BRANDS INC.

Advertising can go far toward creating the image of leadership for a quality product. But a basic factor is the package itself. Its dominance on the shelf, the quality impression it makes, the remembrance power of its brand design...these are essential. The illustration, printed appropriately on Reynolds Aluminum Foil, shows one family of examples. Give *your* product this packaging leadership. ...Reynolds Wrap Aluminum Packaging!

QUALITY PROTECTED WITH Reynolds Wrap ALUMINUM PACKAGING

SEAL HELPS SELL!

Proclaim the fact that your product has the quality protection of Aluminum Foil... it pays! Tell the story on your package, too...with the Reynolds Wrap Aluminum Packaging Seal. Used on more and more products, known to more and more shoppers . . . surveys prove this Seal helps sell!

Look to the Leader in Foil Packaging

REYNOLDS ALUMINUM

PACKAGING LEADERSHIP

Reynolds packaging leadership starts with the recognized superiority of aluminum foil for protection and display. It includes the most advanced research in combination foil materials, the longest experience in designing with foil and the largest facilities for printing on foil. This leadership packaging is available in any form you may require: pouches, overwraps, liners, envelopes, containers, folding cartons, labels. For full details, call any Reynolds sales office. Or write **Reynolds Metals Company,** Richmond 18, Virginia.

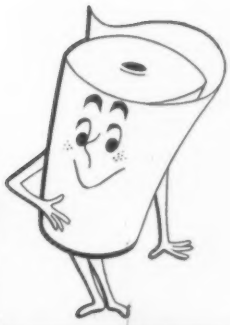
See these Reynolds shows on ABC-TV network: "BOURBON STREET BEAT" and James Michener's "ADVENTURES IN PARADISE" Monday nights; "ALL-STAR GOLF" Saturdays.

REYNOLDS ALUMINUM

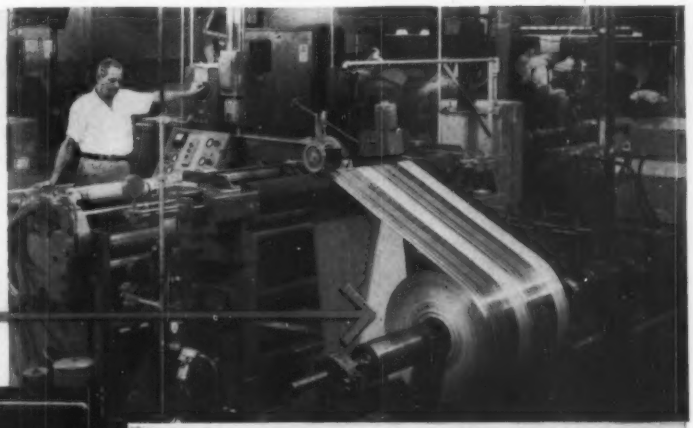
How MILPRINT gets

THE NEW ROLL

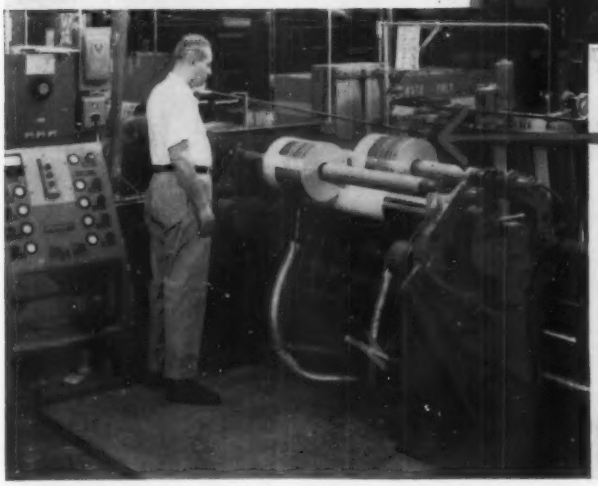
...the highly perfected finished roll produced on an integrated unwinding-slitting-rewinding system engineered by Cameron specialists.



On this integrated Milprint installation *The New Roll* is running 24 hours a day in straight slitting-rewinding and in rewinding-inspection operations. The material, lightweight printed laminated foil, demands:



Integrated Control ...from parent roll



to perfect finished rolls

On this integrated system the parent roll feeds from a Cameron Unwind Stand equipped with several control features including a Cameron Model KW Continuous Duty Brake. Control signals flash through the sensitive Cameron Model 900 Constant Tension with electronic side-register guiding to a printed line. With differential surface-and-center rewind, perfect control is maintained right through to finished rolls on the Cameron 620 slitter-rewinder, using Cameron Pneucut pneumatic score-cut slitting.

The sound, modern engineering and economic principles of *integrated* roll control are being closely studied in converting plants, paper and paperboard mills, and finishing rooms everywhere.

Whether you work with papers, plastic films, metal foils, laminates or any other flexible web material, the growing competitive importance of *integrated* roll control deserves your immediate attention. A finished roll produced on a completely integrated unwinding-slitting-rewinding system is not just a better roll—it is a fundamentally different roll!

We call it *The New Roll*. Its vital new qualities of inward excellence meet and exceed the new standards required in modern high speed, long-run printing, converting and finishing operations.

Get The New Roll Now!

The Cameron team of specialists maintains extensive testing, development and information services adapting *The New Roll* to flexible web materials of all types. You are invited to make use of these facilities at any time. See what *integrated* roll control can do for you. Write, wire or telephone to:

CAMERON
a team of specialists

Cameron Machine Company, Franklin Road, Dover, N. J.
Canada: Cameron Machine Co. of Canada, Ltd., 15 Hatt St., Dundas, Ontario
France: Batignolles-Chatillon, 5 Rue De Monttessuy, Paris (7e) France
The famous TIDLAND pneumatic shafts are sold exclusively through Cameron

AA 175

54 years devoted exclusively to the design and manufacture of slitting, roll winding, unwind and web control equipment.

ONLY AMBER* GLASS FILTERS BEST!

Amber Glass provides the only adequate protection from damaging light rays. It is guaranteed to exceed all U.S.P. light transmission specifications. ■ Provide this positive protection for your prescriptions with Brockway Amber-Glas prescription ware. ■ Your Brockway representative is available for immediate service.

**The U. S. Pharmacopoeia lists as harmful those light rays between 2900 and 4500 angstrom units. Amber stops 97.8% of these rays.*

SYMBOL OF QUALITY · GLASS CONTAINERS

BROCKWAY GLASS

COMPANY, INC., Brockway, Pennsylvania

Sales Offices in Principal Cities

SUBSIDIARIES: Demuth Glass Works, Inc., Parkersburg, W. Va.

Tygart Valley Glass Co., Washington, Pa.

Shoppers' Favorites... in award-winning packaging* by Cellu-Craft

Winning *prizes* is mighty gratifying. Winning *sales* is much more rewarding. Winning prizes AND sales takes a combination of merchandising know-how, design genius, and production prowess. Cellu-Craft — America's largest independent manufacturer— combines all these talents under one roof — including art, plate-making, printing, and converting. Put all these services to work for you with just one letter or phone call. Write or call today for a qualified Cellu-Craft packaging engineer.

** All packages shown were award-winners in the 1959 NFPA contest.*

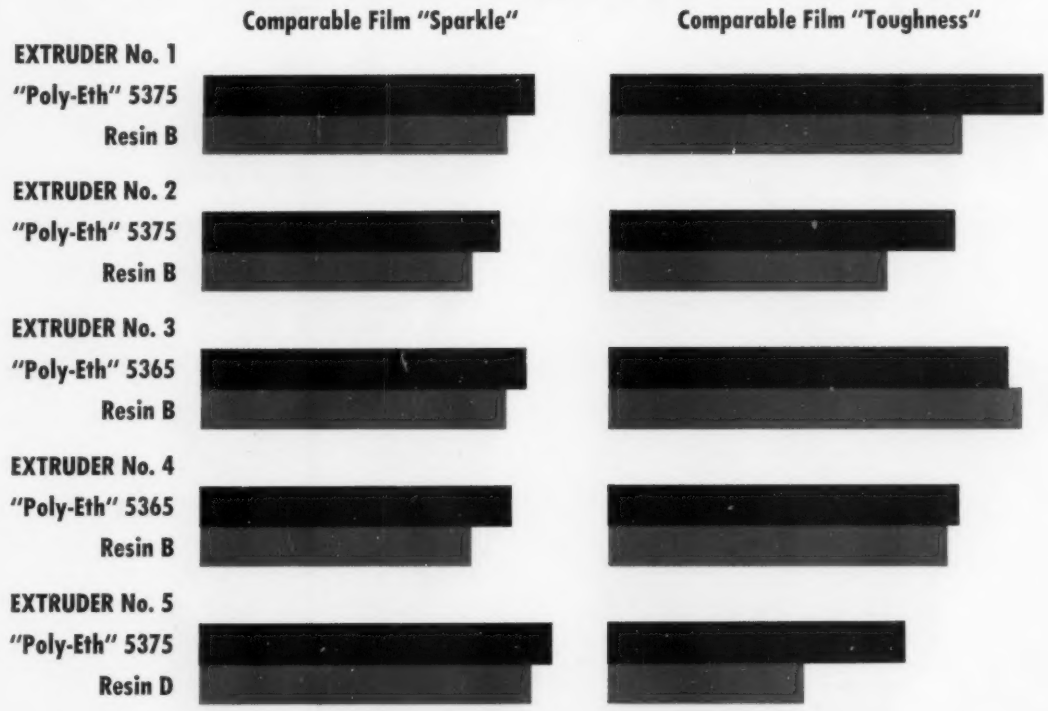
CELLU-CRAFT
PRODUCTS CORPORATION

General Offices & Plant: 1401 4th Ave., New Hyde Park, New York, PRimrose 5-8000. *Sales Offices in principal cities.*
DESIGNING of flexible packages. PRINTING: Glolux® Gravure, Process, Line & Tone Flexography on Cellophane, Polyethylene, Glassine, Extrusion Coatings, Laminations, Foil, Acetate, Pliofilm. CONVERTING: Rolls, Sheets, Bags, Pouches, Envelopes.

Advanced resin technology developed by Spencer

New Polymorphous Packaging Film With

Tests of Actual Production-Run Film Show How "Poly-Eth" 5300 Compares In Toughness and Sparkle:



It's easy to see that film made of Spencer's new polymorphous resins has a definite advantage over competitive materials. These charts were developed from film run by five different commercial extruders. Differences in values for the same resin result from variations in equipment and operating techniques. For complete information on these and other tests, contact your Spencer Representative.

SPENCER® **Poly-Eth®** Polyethylene

SPENCER CHEMICAL COMPANY, DWIGHT BLDG., KANSAS CITY, MISSOURI

Chemical Company now makes possible . . .

Polyethylene For Toughness & Sparkle

Here's how "Poly-Eth" 5300 Series resins give you an exclusive balance of film properties for greater product protection and eye-catching sales appeal:

Packaging experts have long searched for a general purpose polyethylene film that contained *both* of these important properties: (1) the toughness necessary for rough handling and for long shelf life; and (2) the sparkling appearance needed to attract the customer and close the sale.

But now at last . . . toughness *and* sparkle have been combined in a single polyethylene film. This new and different kind of film is made possible by Spencer Chemical Company's development of "Poly-Eth" 5300 series resins. These resins are the result of a breakthrough in resin technology which produces what is called a "polymorphous" polyethylene resin.

Because they are polymorphous, these resins produce films with an unusually high degree of impact strength and tear resistance. Gloss is tops. Haze is held to a minimum. And yet this film is truly *tough*. At the same time, "Poly-Eth" 5300 series resins offer a complete balance of all other properties necessary in a general purpose packaging film.

Before being released for broad-scale film production, these polymorphous resins underwent an extensive series of field tests in commercial extrusion plants under a wide variety of processing conditions. In these tests, films made of "Poly-Eth" 5300 series resins were compared with films made of leading competitive resins. In nine out of ten cases, the "Poly-Eth" films were found to be definitely superior (see chart at left).

You are invited to compare a sample of this new film with your present film. For a roll of 1¼-mil flat film (50′ long x 11″ wide), contact your Spencer Sales Representative, or mail coupon with your business letterhead. There's no obligation, of course!

This drop test is just one of a variety of tests used to compare the properties of "Poly-Eth" 5300 with leading competitive resins.

SEEING IS BELIEVING:
For free sample of film, attach coupon to your business letterhead and mail today!

Mr. Fred C. Sutro, Jr., Polyethylene Product Manager
Spencer Chemical Company
Dwight Building, Kansas City 5, Missouri

Please send me a free 50′ sample roll of 1¼-mil film made from your new "Poly-Eth" 5300 polymorphous resin. I understand this places me under no obligation.

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

The LONG and SHORT of POUCH MAKING PERFORMANCE

Simplex®

7-24
POUCH MAKING MACHINE

HANDLES:

Coated Papers

Scrim

Scrim-Backed Foils

Poly-Cellophane Laminates

Poly-Lined Foils

...or

Any Suitable Heat-Sealing Material, *Including Boilable Types*

GREAT STRENGTH for staying power

GREAT VERSATILITY for savings power

Here are only a few of the Model 7-24's many performance features: Adjustable speeds of 56 to 90 pouches one-up; or up to 180 pouches per minute, two-up. Sizes range from a minimum of 1½" x 3½", to a maximum of 12" x 20" (12" x 80" maximum with skip cut attachment). Note: For unusually large width and length requirements, inquire about the Simplex 8-7, a larger, heavier, wider model of this same basic machine.

Get all the facts, today.

A wide variety of adjustments or attachments are available on this versatile machine to cover every need. Among these are:

- Water cooler for seals on heavier material
- Two rolls face to face, or one roll folded over
- Two-up from one roll by folding over both sides
- Top only, or top and bottom heat on side sealers
- Imprinters, coders, daters easily attached
- Electric eye print registration control

Putting Ideas to Work

fmc
FOOD MACHINERY AND CHEMICAL CORPORATION ®

FOOD MACHINERY AND CHEMICAL CORPORATION

FMC Packaging Machinery Division

534-23rd AVENUE, OAKLAND 6, CALIFORNIA

Foreign Sales: FMC International Corp., P.O. Box 1178, San Jose, Calif., U.S.A.
(Cable Address: FOODMACHIN)

For a new perspective, look at this illustration from across the room.

Crossett Machine Time Plan – new perspective on purchasing paper

"For fourteen hours every month," one Crossett customer likes to say, "I own this paper mill." This is virtually what happens with each of Crossett Paper Mills' regular customers. Each has specific amounts of *machine time* reserved each month for his specific requirements.

The Crossett Machine Time Plan means that Crossett customers can count on getting paper precisely as and when ordered—and always at a fair price.

Crossett Leatherneck Wrapping Paper. Consistent quality in all weights, weight-controlled for customer savings.

Crossett Leatherneck Converting Kraft. Custom-produced to the exact weight and quality needed. Basis weight control assures predictable yardage per ton. Crossett Technical Service available to customers.

Crossett Food Board. Cylinder machine production places long and short fibers precisely where needed for every packaging and printing requirement. Crossett Technical Service helps with customer problems.

Crossett
PAPER MILLS

A Division of The Crossett Company, Crossett, Arkansas, makers of paper, lumber, charcoal and chemicals. All from managed forests.

Stylour packaging for Revlon by F. N. Burt Co., Buffalo, N. Y.; for 1847 Rogers Bros. by The Box Shop, New Haven, Conn.; for Westclox by Westclox Div. of General Time Corp., LaSalle, Ill.; for Ronson by Gilman Bros., Gilman, Conn.; for Paper-Mate® by A&E Plastik Pak Co., Los Angeles, Cal.; for Gold Crown (Gemex) by Valley National Corp., Milldale, Conn.

Nashua's STYLOUR®. . . new, low cost way to give a "plush look" to packaging

The look . . . the feel . . . the richness of velvet! Yet it's low-cost polystyrene – polystyrene that's flocked before you form it – Nashua's exciting new Stylour!

Pressure-form it, vacuum-form it, bend it, die-cut it – and Stylour keeps its beauty . . . offers you a new, economical way to give a "plush look" to packaging without fabric linings or other costly materials.

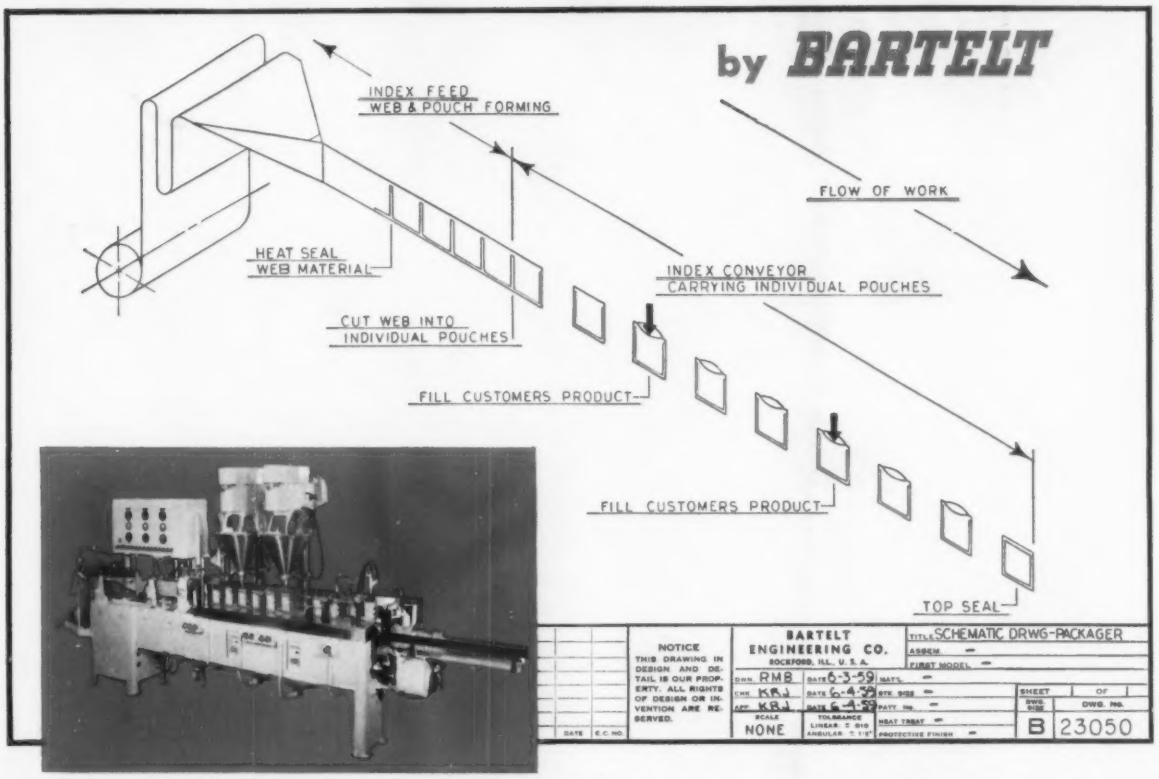
For low-cost glamour-packaging . . . for platforms and die-cut parts . . . for protective packaging – investigate Stylour. Can be supplied in a wide range of gauges and colors, in rolls or sheets, with cotton or rayon flocks.

Write for Stylour samples and full information to – Nashua Corporation, Dept. MP-26, 44 Franklin Street, Nashua, New Hampshire.

Stylour is backed by Nashua's 30-year experience with flocking and flock adhesives. High impact, low temperature polystyrene extruded by The Gilman Bros. Co. of Gilman, Conn., is used exclusively — your assurance of uniform high quality.

NASHUA Corporation®

DESIGN FOR SUPERIOR FLEXIBLE PACKAGING!



Horizontal Work Flow Provides Important Advantages in Fabricating High Strength Flexible Pouches...

Study the drawing above and the points listed below. *No other flexible packaging machine can provide you an operation with all these important advantages!*

1. Forming of the web is *completed* prior to bottom and side sealing. Thus, no forming stress interferes with proper sealing . . . no built in pleats or tucks occur and superior seals are assured.

2. Side and bottom seals are *set* before cut-off, pouch opening, or filling takes place . . . Seals cannot be weakened by product contamination, or stress caused by cutting, opening or filling while seals are hot and plastic.

3. Filling takes place in a station designed for filling only. Thus, product contamination of cut-off knives, seal bars or other tooling is negligible. The only thing below the fill station is the stainless steel dust cover and spill chute.

4. There are several stations available for the application of special tooling: cooling bars, perforating blades, partition seal bars, top fold mechanisms, tear string and saddle label applicators, die cutting tools as well as special filling devices.

5. Top sealing also takes place in a position of its own, well removed from the filling operation to avoid seal contamination. The preceding few stations are free and available for paddling and pouch stretching so that the pouch is presented flat and ready for an undistorted top seal.

6. This logical and practical sequence approach means that each operation not only has its own position, but its own mechanism designed for one operation only. The absence of complex double or triple duty mechanisms substantially reduces maintenance problems and costs while it increases operation efficiency.

WHERE UNFAILING QUALITY COUNTS!

BARTELT ENGINEERING COMPANY

1900 HARRISON AVE., ROCKFORD, ILLINOIS • NEW YORK, 370 LEXINGTON AVE., N.Y.C.

One more reason* why you should

call Ball first

GLASS CONTAINERS
FOR METAL CLOSURES
PACKAGING COUNSEL

Complete Packaging Counsel That Helps You Clinch Sales at Her *Moment of Decision*

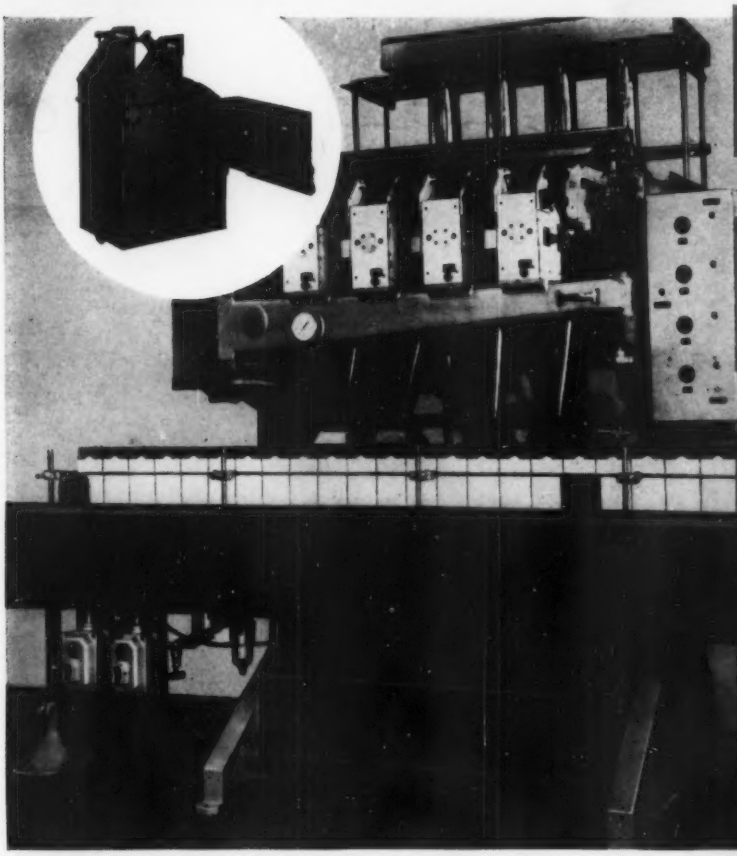
Attractive container — displaying and enhancing its contents through clear, sparkling glass . . . colorful label — swiftly spelling out trade name and information . . . protective closure — sealing in freshness and goodness, its top another bright spot for trade mark and message.

Each of these plays an important part in complete packaging. Compelling design and careful planning by Ball can integrate each into one effective selling tool.

Together, at the customer's all-important moment of decision, they can help move your product from the store shelves faster. The decision to make use of Ball's packaging counsel, glass containers and closures may be momentous for the sales future of your product.

BALL BROTHERS COMPANY, INC., Muncie, Indiana; Chicago, Illinois; Okmulgee, Oklahoma; El Monte, California. *Represented in major cities through the United States.*

THERE'S NO WEIGH LIKE PNEUMATRON!



Net weight accuracy never before attainable

High speed air circuit action

Extremely responsive to changes in product density and feeding rate

Weighing assembly travels only minute distance - .020"

Practical approach to instantaneous pressure weighing

Sensitive, yet durable, continual operation without change in accuracy

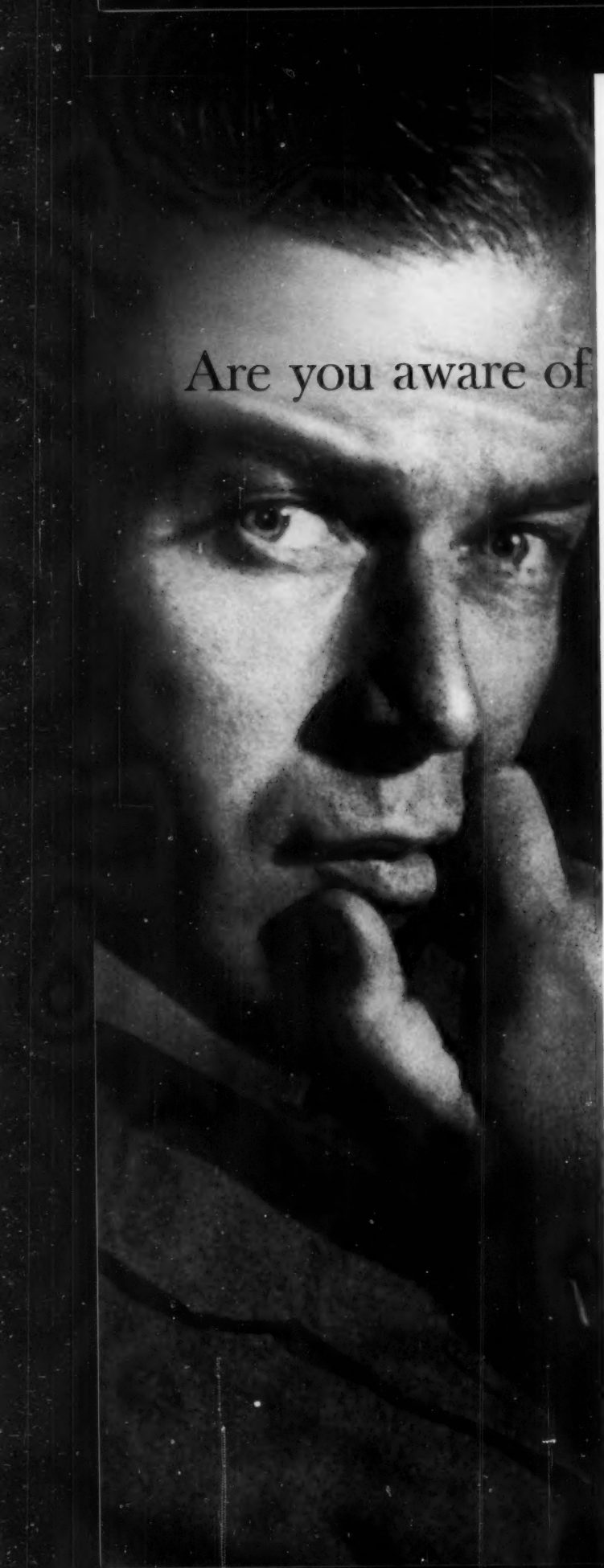
No weighing method ever devised offers the combination of speed, accuracy and dependability that is inherent in the revolutionary PNEUMATRON design. It establishes new standards of precision in net weighing. Available in two, four and six head models. Each head consists of a sensitive cantilever assembly and air control device for accurately detecting the deflected position of its receptacle as goods are filled.

Write for Bulletin #122 giving complete information.

PNEUMATIC SCALE CORPORATION, LTD., 82 Newport Avenue, Quincy 71, Mass. *Sales Offices: New York; Chicago; Dallas; Rochester. Agents: Fred Todt Company, Los Angeles, San Francisco and Seattle; Rockwell Pneumatic Scale Ltd., London N.W. 2, England; O.R.M.A. Paris, France. Subsidiaries: Delamere & Williams Co., Ltd., Toronto; Carbert Manufacturing Co., Inc., Cambridge, Mass.*

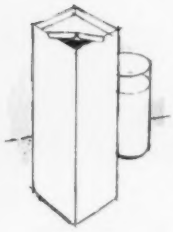
PNEUMATIC

Packaging and Bottling Equipment

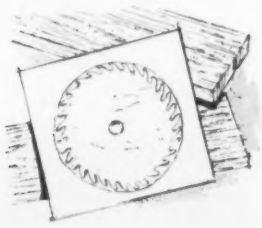


Are you aware of all the advantages of

In planning an efficient package for your product, you no doubt considered the obvious advantages offered by polyethylene as a coating resin: the resistance to chemicals and solvents that coatings of polyethylene can give to your package . . . the puncture resistance, low permeability to liquids and water vapor . . . the flexibility over a wide range of temperatures . . . and the extra consumer appeals of visibility or convenience that polyethylene coatings often make possible.



But have you considered the many other ways these versatile resins can help you package your product more conveniently and economically? Example: milk cartons coated with polyethylene resins are not only leak-proof, but avoid objectionable flake-off. Example: because of a new process that makes certain



polyethylene coatings for your packages?

polyethylene coatings gluable, packages of coated boxboard may now be filled and sealed at the high speed necessary for economical operation. Example: convenient, sales-winning heat-and-serve food packages use coatings of polyethylene to provide heat seals that withstand freezing and boiling temperatures. Example: linings of polyethylene on multiwall shipping sacks resists microbic attack, offer a quick-release, non-stick surface that reduces wastage. Example: in flexible packaging applications a polyethylene coating on foil cushions the foil against fracture.

Naturally, not all formulations of polyethylene are equally suitable for all jobs. That's why Du Pont offers 12 formulations of ALATHON polyethylene resins for packaging applications, each tailored to meet a specific need. The next time you have a packaging problem that might be solved by the use of a polyethylene coating, consult with your supplier of packaging materials about the selection of the right formulation of ALATHON.

To help you evaluate the contributions that ALATHON *can make in your packaging operation, Du Pont has prepared a new booklet that discusses a wide variety of recent advances in packaging techniques, and offers helpful information about the many compositions of* ALATHON *now available. For your copy of* "ALATHON . . . *new dimensions in packaging*", *write to:* E. I. du Pont de Nemours & Co. (Inc.), Dept. Y-2, Room 2507A Nemours Bldg., Wilmington 98, Del.

ALATHON®

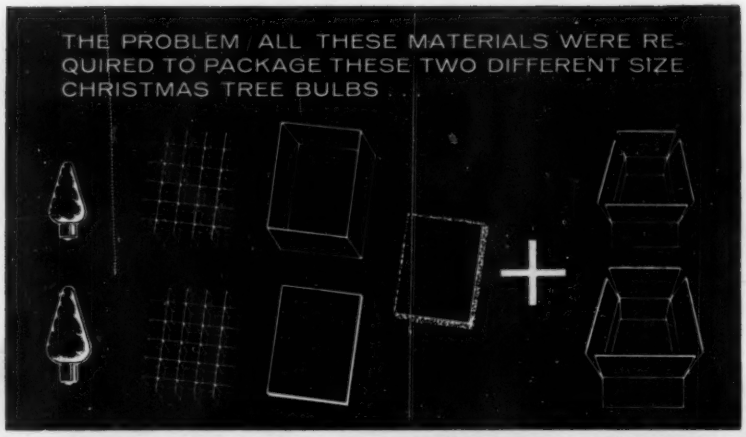
Du Pont's trademark for its family of dependable, uniform polyethylene resins

POLYCHEMICALS DEPARTMENT

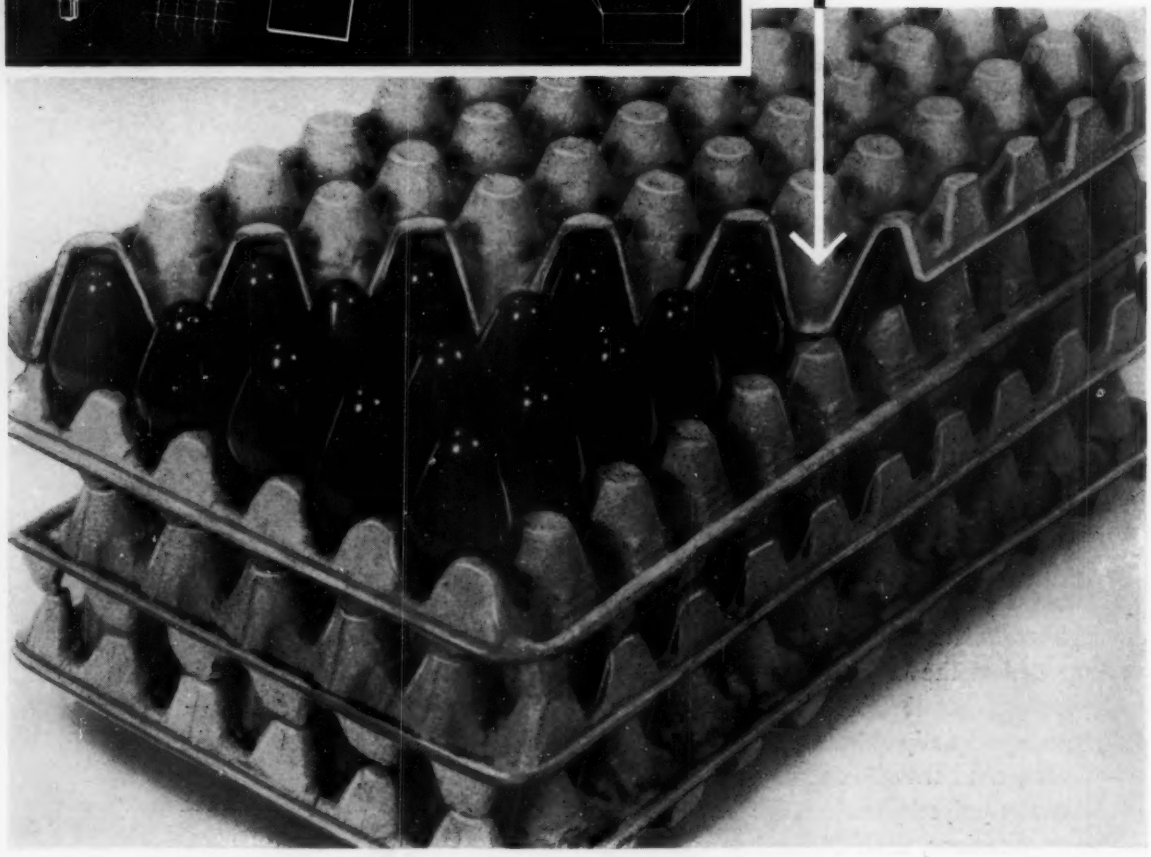
DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



Another problem solved with Keyes Custom Molded Packaging



NOW BOTH SIZE BULBS ARE PACKAGED WITH A SINGLE MOLDED PULP TRAY AND STANDARD BOX

Let Keyes Product Development Engineers show you how to cut costs, cubage and breakage with custom molded packaging

Molded pulp is the one inexpensive packaging that combines rigidity with remarkable cushioning properties. This packaging material can be molded to the shape of your product . . . eliminating the need for set-ups, cell partitions, fillers, pads and loose packing material. If you'd like to learn how Keyes Custom Molded Packaging can cut your costs, cubage and breakage, write:

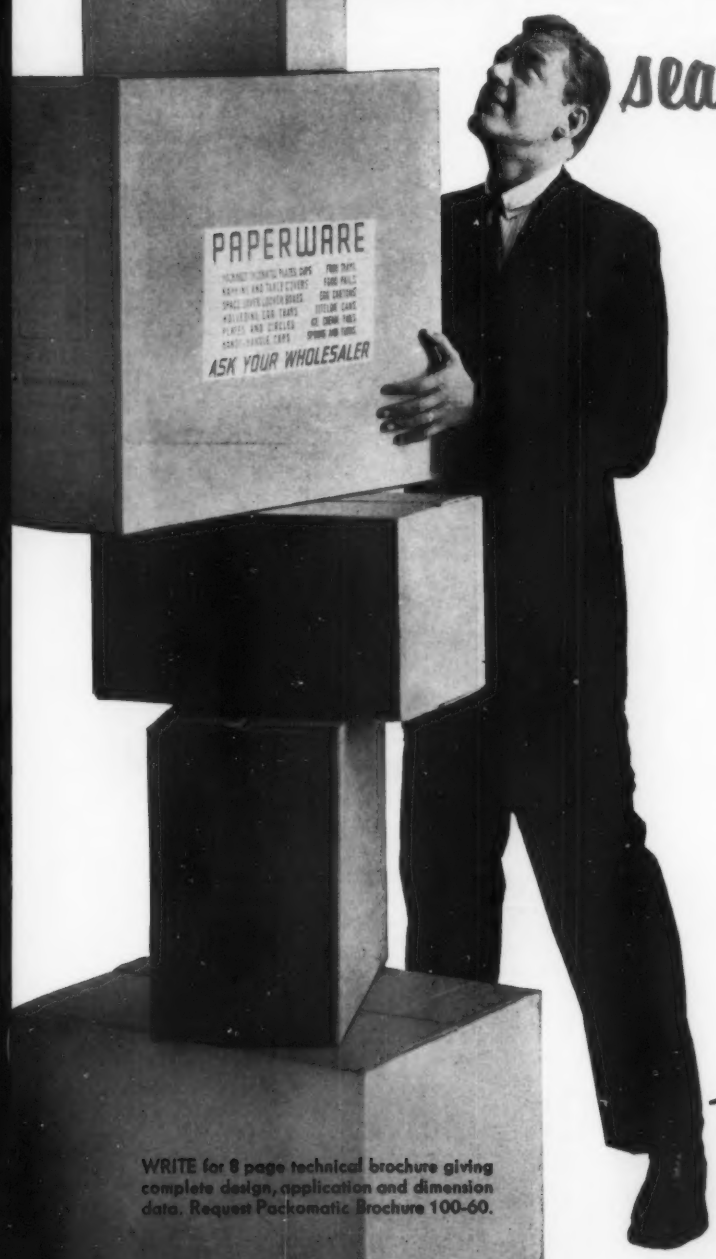
Product Development Division, Dept. MP-2,

Keyes Fibre Company, Waterville, Maine

KEYES

What?

Feed all these different sized cases, in random order, into one automatic case sealing installation?



Yes! It's being done. The Omnimatic-Rotopress automatically seals and discharges corrugated shipping containers of widely varying dimensions, fed to it in random order, at speeds up to 20 cases per minute. A choice of pre-set discharge patterns permits the simultaneous use of as many as five different Rotopress discharge stations, with sealed cases of different heights automatically discharged to separate take-away conveyors. The G.E. installation shown below, employing a unique circular compression unit, occupies only 144.9 square feet, and permits random feeding of cases that may vary in length from 8″ to 30″, in width from 6″ to 22″, and in height from 6″ to 18″. This machine can be built to accommodate your particular range of case sizes.

"Write for Omnimatic-Rotopress Brochure #100-60-MP

Packomatic Omnimatic-Rotopress operating at the General Electric Company's Trumbull Lamp Plant at Warren, Ohio.

WRITE for 8 page technical brochure giving complete design, application and dimension data. Request Packomatic Brochure 100-60.

Packomatic®

J. L. Ferguson Company
Box 1226 (Phone 6-6275)
Joliet 3, Illinois

EXCEPTIONAL PRINTING MAKES THE DIFFERENCE

on RIGID plastic containers

...helps make the sale!

- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
- Lightweight and shatterproof—with rigid wall protection
- Economical—with customer re-use value
- Also made of new high density polyethylene —Poly-Opal*. Are chemically inert, stain resistant and have lower permeability to moisture and gases than conventional polyethylene.

*T. M.

Write for full-color catalog, samples and prices.

LERMER PLASTICS, INC.

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PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

imco *hairbreadth* tolerances save you time and money

Wall thickness governs the amount any container holds. That's why it is so important for every one of your polyethylene containers to be as nearly perfect as possible. IMCO spares no trouble or expense to produce hairbreadth tolerances every time . . . tolerances almost as fine as a human hair. That means that every IMCO container holds exactly the proper amount . . . no more and no less. Yet IMCO containers are just one fifth the weight of comparable glass containers . . . to reduce shipping and packaging costs. It's just one more example of the guaranteed IMCO qualities which save you time and money. IMCO containers are guaranteed to match your specifications so closely that production lines never jam due to dimensional variations. IMCO containers are guaranteed to be the color you want . . . every time. You pick the color that sells your product . . . IMCO reproduces that color . . . exactly. Every IMCO job is performed with high-precision control and exacting consistency to produce the finest containers possible . . . at the lowest possible cost.

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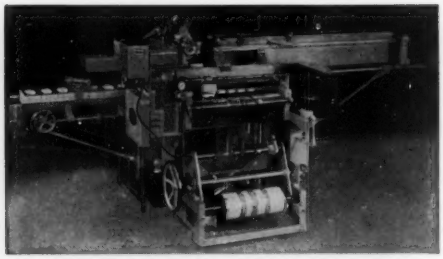
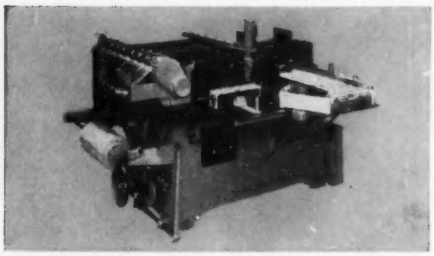
Chicago, Illinois
Los Angeles, California
Toronto, Ontario, Canada
Memphis, Tennessee

For complete information about putting your product in a tailor-made IMCO container, contact the IMCO representative nearest you today!

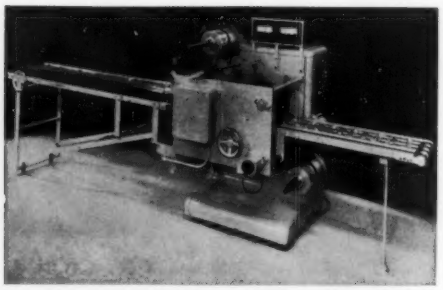
IMCO



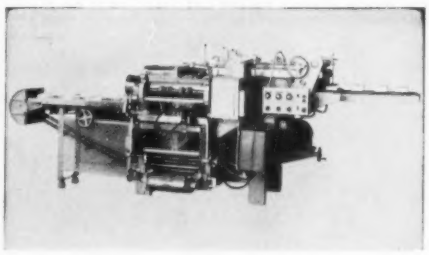
NOW YOU CAN HAVE TOMORROW'S OVER-WRAPPING MACHINE TODAY! Battle Creek's completely new Model 475 successfully handles more than 40 different formulations of soft plastic film . . . your assurance new plastic film developments will not outdate this machine. Change of films requires only electronic heat adjustment. Size changes are made in 15 minutes. Wraps up to 75 per minute within 5″ to 12″ lengths, 3″ to 8½″ widths and ¼″ to 4″ heights. Choose any of these films — polyethylene (medium, low and high density 1 mil and up), polystyrenes, heat sealing cellulose acetates, heat sealing foils, polyvinyl chlorides, cellophanes, polypropylenes or polymer coated films. **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**



REDUCE COSTS . . . PROTECT PRODUCTS . . . IMPROVE DISPLAYS . . . PROMOTE MULTIPLE SALES with Battle Creek's new Model 850 Automatic Bundler. This machine bundles groups of packages . . . 4, 6, 8, 12 and 24 to a bundle . . . at speeds up to 18 per minute. One operator can easily keep pace with a packaging line as high as 180 per minute. Depending on construction selected, the machine bundles with kraft paper, polyethylene, cellophane and other films; in bundles within 5″ to 12″ long, 4″ to 10″ wide and 1″ to 8″ high. Used for textiles, paper items, drugs, chemicals, cosmetics, food products . . . and/or what have you? **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**



CHANGE PACKAGE SIZES WITHOUT EXCESSIVE DOWNTIME! Handwheel controls for varying the pouch width, and a simple gear change for varying pouch length, — both made without disturbing the heat-sealing units — provide almost instant adjustability. Thin articles (not necessarily uniform in shape) are pouch packaged between two endless strips of heat-sealing packaging materials at speeds up to 80 per minute. Pouch sizes range from a minimum of 2″ x 2″ x 1/16″ to 27″ x 15″ x 1½″ maximum. The "Flexopaker" is especially applicable for articles in the textile, food, automotive parts, industrial products, hardware or similar industries. High speed "Continuous Flow" performance but with a low price tag. **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**



THE SOLUTION TO WRAPPING FRAGILE BAKED GOODS . . . QUICKLY, SAFELY! Battle Creek's Model 43L has been designed specifically for the bakery with the problem of packaging small bakery products . . . such as cookies, iced cupcakes, turnovers and pastries. A machine capable of wrapping from 40 to 70 packages per minute, the Model 43L handles each package gently, smoothly and quickly. Package sizes may vary from 3″ x 1¾″ x ½″ to 10″ x 4½″ x 4″. Wrapping material may be printed or unprinted cellophane, with or without separate top labels. Each package is a miniature bakery "showcase." **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**

AVERY

the triumph of innovation

... the success of an idea

Pioneering pressure-sensitive labeling marked a dramatic departure from less efficient methods. But originating these handy, self-adhesive labels was only part of it—applying them was another story. Avery wrote it by designing an entire series of manual and automatic dispensers to help apply these time-saving labels with effortless ease.

Now Avery's Automatic Labeler represents a giant step in the evolution of pressure sensitives. Developed to apply labels in exact register, it is capable of dispensing up to 200 labels per minute on packages, film surfaces and products. Its proven ability for labeling everything from cosmetic cases to food cartons already has established it as a solid success.

The Avery Labeler is only one of several highly efficient labeling machines introduced by Avery to meet particular requirements the world over. A versatile new Avery imprinter can deliver up to 7000 impressions per hour, providing perfect register on all types of Avery pressure-sensitive labels, paper, film and metal foil.

If you mark, label or identify *anything*, it will be worth your while to investigate this quality line of time-saving manual and automatic labeling equipment. For progress in pressure-sensitive labeling, look to the leader—that's Avery: worlds ahead!

Avery's streamlined packaging system, based on standard one-piece boxes with black polka dots on vivid yellow background, is designed to improve recognition and reduce handling . . . in office, plant, and store. A real packaging innovation—and another Avery first! Write for Avery's general catalog and new brochure on Avery Metallics now!

AVERY LABEL COMPANY *a division of Avery Adhesive Products Inc.*
1616 South California Avenue, Monrovia, California

Here are but a few of the thousands of ways in which manufacturers are profitably using AVERY LABELS today

MAY WE SEND SAMPLE AVERY LABELS?

Removable KUM-KLEEN and permanent PERMA-GRIP labels are both available in practically any material including foil, aluminum, acetate, film, kraft, fabric, metallic coated or special stocks of many types.

Kum-Kleen

Perma-grip

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☐ Please send free Avery catalog and the METALLICS brochure. ☐ Include KUM-KLEEN and Perma-Grip sample labels.

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Company _____

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CUBITAINER®

...the polyethylene cube with a corrugated or wirebound box outerwrap, is widely used by industry and government for bulk liquid shipment. It combines chemical resistance with non-breakability, rigidity of the box overwrap, with considerably reduced costs. The CUBITAINER costs less than other bulk shippers, requires up to 50% less storage and shipping space, has a tare 1/6th that of glass. Pour spout models, heat-sealed after fill, require low-cost specialized filling equipment. Screw-cap models are adaptable to standard equipment. Products now shipped in CUBITAINERS range from acids to fountain syrups, adhesives to pharmaceuticals. Meets industry, government standards, can be used for regulatory products. Investigate this container today! Write:

HEDWIN

HEDWIN
CORPORATION
BALTIMORE 11, MARYLAND

Mercury's **MARK W-7 AUTOMATIC CONTINUOUS REWINDER**

Doubles Your Operating Speed

This unit will produce hard, straight rolls . . . automatic, continuous operation at the top operating limit of your converting equipment. A completely self-contained unit that may be operated with any Mercury or other web converting machinery.

SPECIFICATIONS

Maximum roll diameter: 84 inches
Maximum operating speeds: 1200 f.p.m. plus
Constant or tapered tension up to 15-lbs. per inch of web width
Transfer speed: 600 feet per minute
Material: 30-lb. paper to .040 boxboard

M G D

A SYMBOL OF FINE CRAFTSMANSHIP

MERCURY
ENGINEERING CORPORATION
A SUBSIDIARY OF MIEHLE-GOSS-DEXTER INCORPORATED
2100 N. FARWELL AVE. · Milwaukee 2, Wis., U. S. A.

What you should know about

When should your corrugated

Selecting the most appropriate type of linerboard for your shipping container is not unlike selecting the cloth for a suit . . . or coat. Until a few years ago the choice of materials was fairly limited. Today, there is an almost endless variety of natural and synthetic fibres or combinations. And the same thing applies to the tailoring or corrugated shipping containers. For as with natural wool and cotton it is now possible to alter the basic characteristics of kraft linerboard and endow it with properties to meet practically any shipping requirement.

Each specially treated corrugated box — whether made from coated, laminated or impregnated board — has its own unique features and advantages. Which type to use and when to use it will depend upon the characteristics of your product, the nature and degree of protection needed and the way in which it is distributed.

Super-Barriers

Suppose, for example, you're shipping an

special board for Union Boxes

box get special treatment?

item that requires positive protection against moisture attack. Asphalt laminations and certain plastic coatings may offer an excellent solution. Other coatings and laminations, such as glassine, make an effective barrier to the migration of grease and oil. Still others resist chemical attack or provide insulation against temperature extremes. There are even special coatings that inhibit the transmission of gases — a property often capitalized upon where aromatic scents and flavors must be retained.

In addition, there are special wax or plastic coatings that may be applied to the interior of boxes to protect items such as highly polished furniture, or delicate textiles from abrasion and picking. In some cases these coatings may also be used as release agents to facilitate emptying the box of its contents.

At the other end of the scale, there are special non-slip or non-skid coatings which give a rough high friction "skin" to the outside of the box. This built-in safety factor has helped save thousands of dollars in reduced damage costs and speedier handling and warehousing.

Added Security, Sales Appeal

Increasingly too, varnish applications are being applied to container-board to protect surfaces against scuffing and to help create greater eye and sales appeal by imparting a slick, glossy finish and background for printed art and copy.

This modern "marriage" of different materials to basic kraft board has made possible outstanding new shipping economy and efficiency. It has also opened up a host of hitherto unheard of uses for corrugated boxes.

Ask your Union Box representative to tell you more about them — and how they might profitably be applied to your product or packaging operation. He'll be happy to do so. It's another part of the Union Box complete packaging service to all corrugated shippers.

This machine in Union-Camp research laboratory laminates and coats paper and board with water- and solvent-based solutions which need no heat during application.

Special impregnated board solves problem of shipping oily agricultural twine. Resistance to water and oil strike-through increases product protection – leaves box clean and neat.

Good skid resistance, here being measured at Union-Camp's laboratory, is often an important factor in better box handling, stacking and palletizing.

union camp

UNION BOXES

UNION BAG-CAMP PAPER Corporation

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To **retain flavor and aroma** of coffee and other products the

HESSER VACUUM PACKAGE

produced in a fully automatic operation offers these advantages:

Absolutely tight, easy to be stacked, vacuum packages with low weight, consisting of printed outer carton and evacuated inner bag

considerable duration of freshness and thus of the shelf-life of the product

a further guaranty for constant quality of your goods

a convincing sales argument

the inner bag might consist of any heatsealable plastic films or foils of various laminations which will meet the particular requirements

the package is formed, filled, evacuated (possibly gassed), and sealed on one machine in a **continuous operation.** Printed outer cartons fed from magazine and liner material from reel — **the most economical way to produce vacuum packages.** All seals of the inner bag are made in finseal fashion,

free choice of suppliers for the packaging materials.

Ask for the **HESSER**-VACUUM machine

the machine operates at a speed of abt. 60 packages per minute and does not require more floorspace and operators than the fully automatic standard **HESSER** - packaging machines; no special training required for the vacuum operation of the machine.

Further details on the **HESSER**-VACUUM package concerning package forming, package costs and suitable liner material through

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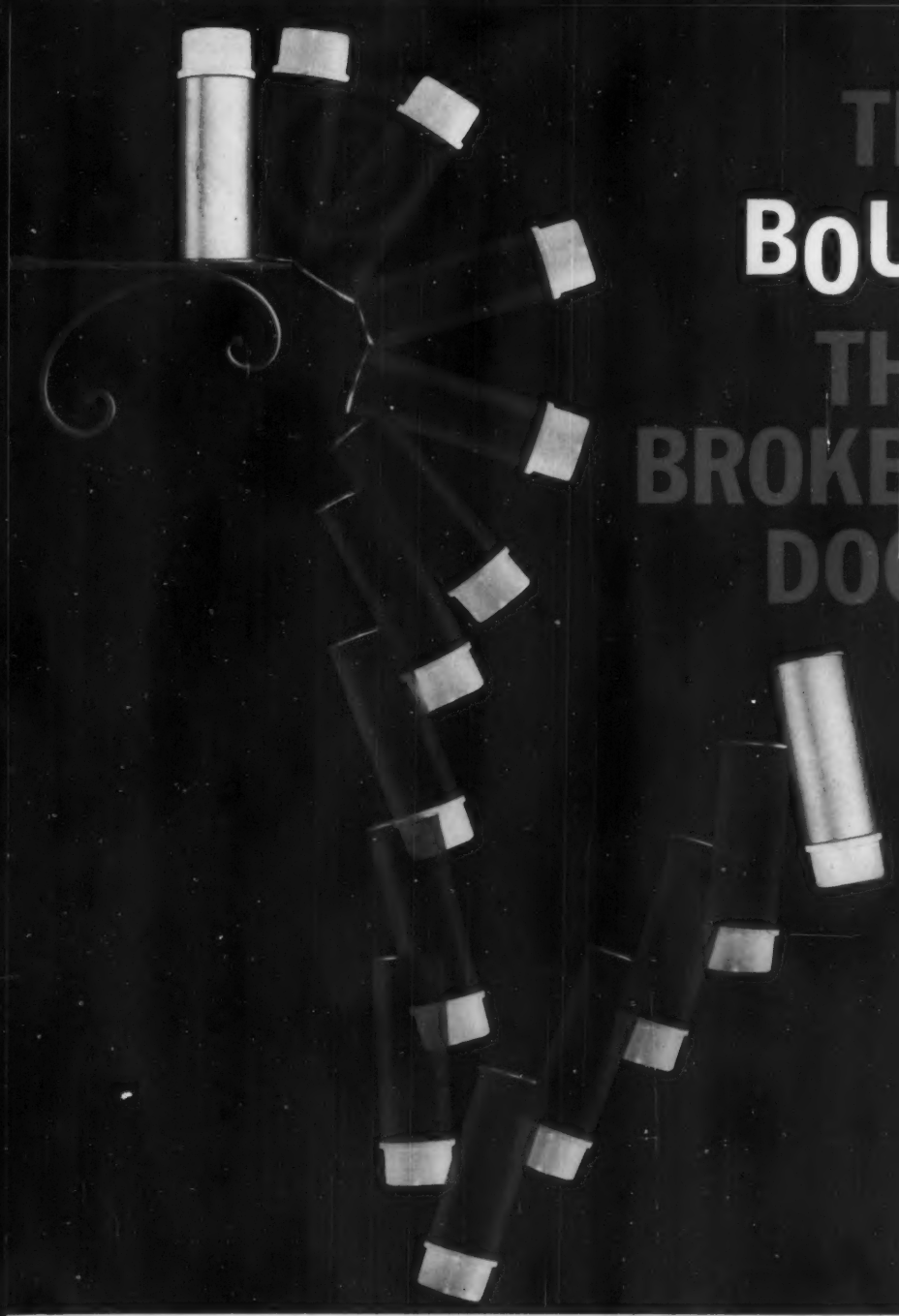
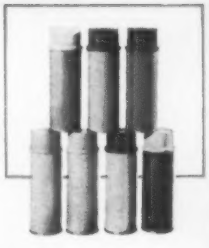


THE BOUNCE THAT BROKE DOWN DOORS!

The day the first Gilbert plastic Stack-Cap bounced hard — and came up intact — the door to retailer acceptance of plastic aerosol can caps opened wide. It is the only truly unbreakable plastic Stack-Cap that won't shatter or dent. Retailers can stack up mass aerosol can displays, make every inch of space pay, mark prices faster. Every imaginable color is available, molded right into the plastic to end chipping, peeling or fading. And mass produced Gilbert Stack-Caps, to fit every standard size, cost less.



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Background for Packaging

Price showdown in growing competition between aluminum and steel for the can market awaits final analysis of steel costs following settlement of the steel strike. Having concluded their own labor negotiations earlier, both the can and aluminum industries had raised prices to compensate. The new can schedules, significantly, are guaranteed to the end of this year only if "there are no cost increases in steel plate directly related to metal containers." Cost increases in steel appear inevitable and any further narrowing of the price gap between the two can materials may be sufficient to swing the whole user industries—such as frozen citrus concentrate—into aluminum.

Wasteboard makers vigorously dispute the idea that their product will not be acceptable for food-contact uses under the new Food Additives Amendment unless lined or coated. They have an extensive research program under way at independent research laboratories, which they expect will prove the suitability of their product for food packaging. They expect to show that wasteboard ingredients can be identified and controlled to produce an acceptable "food grade." The outcome is important to packagers of dry cereals, candies, flour mixes, salt and spices, who use most of the thousands of tons of unlined wasteboard or juteboard currently going into folding cartons and containers for the food industry.

Predicting 1960 as the most prosperous year ever for the food industry, *Harold W. Comfort*, president of Borden's, cites improved packaging—for better quality, flavor and keeping ability—as a major factor. He also foresees continuation of a move which began strongly last year toward a greater variety of package sizes, particularly larger ones. *Note*: Carnation now markets its non-fat dry milk in five different sizes, ranging up to a giant 20-qt. carton.

Justification for the higher cost of ready-to-serve packaged foods is found in a *Department of Agriculture* survey showing that a day's food for four, composed of ready-to-serve items, took an hour and a half to prepare and cost $6.70, against partially prepared meals that took 3 hrs. and cost $5.80, and meals prepared entirely at home, 5 hrs. and $4.70. Through packaging, a housewife thus can save time at a cost of 57 to 60 cents an hour. Today 12 million housewives—one-third more than six years ago—are jobholders, selling their time for $1.50 to $2 an hour.

A point to watch, now that *Food & Drug Administration* clearance under the Food Additives Amendment has become a prime fact of life for all food packagers: The fact that a particular package or packaging materials has been sanctioned by F&DA gives no authority so to state in the labeling of the product. Presumably, this applies to the labeling of suppliers' shipments of containers and materials, as well as to the finished food package. F&DA emphasizes that it has not authorized anyone to use its name on labels except as provided in specific statutory provisions.

Discretion is called for in packagers' demands on suppliers for legal guarantees under the Food Additives Amendment. One large food processor is applying a blanket policy to all suppliers on all packaging materials. This had led to a demand that label manufacturers, for example, sign formal F&DA clearance guarantees with indemnities, etc. Label makers balk at this, feeling that there is no [*Continued on page 44*]

Now packaged to
sock competition . . .
FRUIT OF THE LOOM
BOYS' STRETCH SOCKS
ONE PAIR 39¢
100% NYLON
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. . . . . with BRITE-PAK ENAMEL COAT

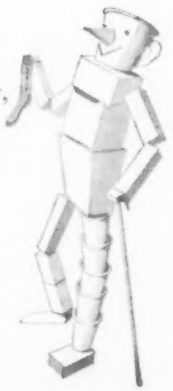
Another famous name has switched to Brite-Pak Enamel Coat bleached board for packaging!

Kayser-Roth Hosiery Co., Inc., world's largest hosiery manufacturer, now presents its "Fruit of the Loom" stretch socks in new, eye-catching packages. Snow-white on both sides and all the way through, these sparkling cartons look more sanitary than old-fashioned containers with their drab interiors next to the product.

Brite-Pak Enamel Coat's smoothly gleaming surface is unsurpassed for brilliant, full color process printing and product illustrations, yet this fine bleached board of 100% virgin pulp is truly economical.

Users say Brite-Pak Enamel Coat is the best machine coated bleached board on the market. It is the perfect answer for colorful, *modern* packages. See how you can use it to *upgrade* your packaging . . . and still save money.

For the whole story, write to Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y.



West Virginia Pulp and Paper

reasonable expectation that a label will ever come in contact with food and that it is the packager's responsibility to see that it does not do so. F&DA statement clarifying the point may be sought.

Look for further public-health legislation in the next Congress affecting packaging. F&DA is demanding that new amendments covering color additives to foods, drugs and cosmetics contain the same strict cancer clause as in the recent *Food Additives Amendment*, i.e., that the use, in any amount, of a color that causes cancer in any amount be banned. F&DA also will push for enactment of a *Hazardous Substances Labeling Bill*, requiring adequate warnings and first-aid directions on dangerous household-chemical packages.

Background for Packaging

Private labels are making no headway in the health-and-beauty racks of the supermarkets. This was among the observations made by an eight-man panel participating in the sixth annual Health & Beauty Aids Forum sponsored by *McCall's* for supermarket and drug executives. Apparently, the housewife's inclination toward nationally advertised, prestige brands is more pronounced in this field than in foods.

Among the problems still to be resolved with *F&DA* is that of printing inks on flexible packaging materials in roll form. It is generally agreed that inks should not be allowed on the product side of a food-packaging film. But what about the transfer of ink from the printed to the plain side of the material when wound in rolls? This worries many converters.

Brilliant advances in the technology of glass packaging will be found in the decade ahead, says *Arthur W. Wishart*, president of Knox Glass. Speaking before a meeting of the New York Society of Security Analysts, Dr. Wishart predicted that by 1970 low-cost glass containers not only will be available in every color of the rainbow, but also will be 50% stronger and 20 to 30% lighter than they are today. He said these developments will be the result of more aggressive research by glass-container suppliers to counteract competitive pressures from within and without the industry.

[*Continued from page 41*]

Education in packaging, a $16½-billion industry, lags badly behind comparable industries, despite *Michigan State's* pioneering effort with the first four-year degree course. As late as 1957, only 13 schools in the U. S. offered any course whatever in packaging and only two of these carried college credit. By comparison, more than 900 schools offer courses and some 40 schools offer degree programs in advertising—a $10-billion industry. More than a dozen universities have degree programs in petroleum technology (a $12-billion industry); 33 universities offer options in radio announcing, and at least 12 schools give degrees in dairy science.

Predictions of a vast expansion of blow-molding capacity, to meet the mushrooming demand for high-density, semi-rigid polyethylene bottles, are being borne out. *Continental Can* predicts developments this year in automated blowing and printing equipment which will "obsolete" the industry's present machinery, sets industry's '60 output at 1 billion units, half again as big as '59. *Owens-Illinois* builds a new plastic-bottle plant at North Kansas City and adds to already-expanded plants at St. Charles, Ill., and Glassboro, N. J. Both companies credit liquid detergents for the big push (see MODERN PACKAGING, Oct., '59, p. 109.)

Packaging in Russia, despite the absence of competition, is taking on a better appearance because of the Soviet Government's new drive to impress consumers that they have the good things of life. According to *Walter Landor*, San Francisco designer who toured Russia with an industrial delegation recently, the improved package design is found mainly in luxury goods, such as candies and cigarettes.

freshness is fragile -

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Whether it be food, drugs, toiletries, car wash, bleach tablet or chemically treated dust-cloth, Print-A-Tube polyethylene coated films offer long shelf-life, moisture, and grease resistance plus greater sellability. Reverse flexographic printing, sandwiched between layers of film, is ever bright and sparkling clear. Protect the fragility of freshness of your product with Print-A-Tube clear or opaque film laminates. Send samples of your products today for test package and cost analysis.

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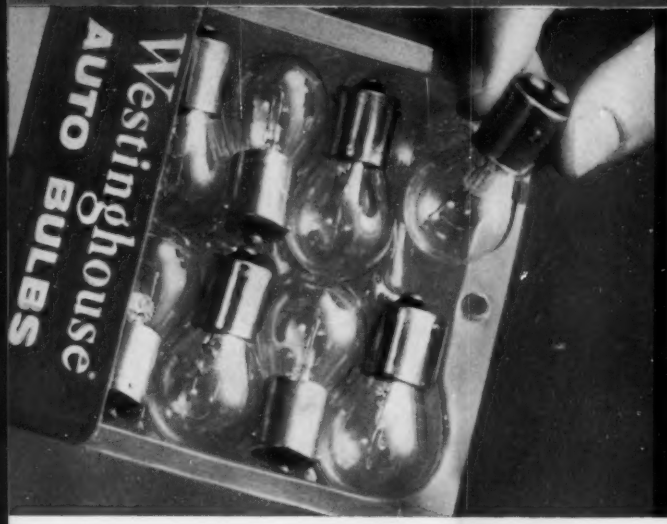
Extrusion-coated foil and films for automated packaging of liquids, solids and powders.

TAKE BLISTER PACK...

SLIDE OUT CARDBOARD...

REMOVE BULB...



HANG UP FOR NEXT SALE

Slideplax package by Plaxall, Inc., 5-26 46th Avenue, Long Island City, N. Y.

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ACETATE SHEETING TO SELL AUTO BULBS

Westinghouse packages a complete line of auto bulbs—five different sizes—in Celanese Acetate sheeting. The products beckon to customers through their sparkling acetate showcase. And look at the intricacy of the thermoforming. The slide track blister fits closely over all ten bulbs, holding them tightly to the backing yet easily accessible for unit-by-unit sale. Acetate blister packs are rigid, protective, won't embrittle even when stored for years . . . and they're economical, too!

If you want a cost-cutting way to make a top quality package, why not see what thermoformed acetate sheeting can do for you? Blister packs can be produced at high speed, with filling and sealing operations accomplished automatically. We'd be glad to discuss the costs of converting your operation to blister packaging. Or, send for literature on thermoforming. Celanese Plastics Company, a Division of Celanese Corporation of America, Dept. 108B, 744 Broad Street, Newark 2, N. J. Celanese®

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Oneida puts "persuasion" in *flexible* packaging

The package that's in tune with modern tastes—designed with imagination and richly printed—has a very definite point-of-purchase influence on sales. Oneida can produce just such a package for you, in the flexible material that's right for your product. The facilities of an experienced design staff and four modern plants equipped with the newest 6-color flexographic, letterpress, and rotogravure presses are at your service. An Oneida representative will be glad to call at your convenience.

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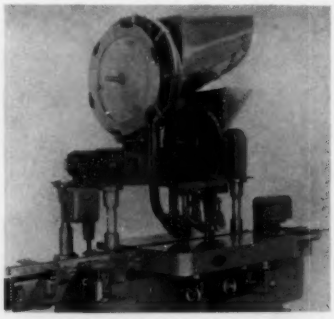
CONVERTERS AND COLOR PRINTERS OF QUALITY PACKAGING from: Glassine, Cellophane, Polyethylene, Vinyls, Parchment, Sulfite, Foil, Kraft, Waxed, Coated and Laminated Materials.

Equipment & Materials

Rolling-ball fitment applicator

High-speed (40 to 120 per minute) insertion of plastic rolling-ball dispensers for roll-on products is available with its new automatic, straight-line, conveyor-fed machine, reports Resina. The Model DBA applies both the plastic ball and a receptacle fitment through a tandem chute arrangement. Delivery and placement of the ball and fitment are controlled by the container passing through on the conveyor. A press-down roller unit is designed to assure proper seating of both package components. A grip-belt principle in the new machine eliminates the need for change parts for conventional, different-size containers, says the supplier. Available as optional equipment is a fitment and ball-detector device. *Resina Automatic Machinery Co., 572 Smith St., Brooklyn 31.*



Vacuum-forming equipment

Hydro-Chemie, a Swiss machinery manufacturer, introduces three new vacuum-forming machines. The Formseal forms containers of various shapes and sizes from polyvinyl-chloride sheet, then fills, seals and trims them. Also available from the company is the Formpack R-4. It is an automatic, rotary machine which is reported to provide exceptional economy in the forming of deep containers, such as drinking cups and the like. A complete cycle—including forming, trimming and beading—takes three seconds, says the supplier. The third new machine is the Formvac Junior 59. Essentially geared for laboratory use or short-run production, it is equipped for deep drawing, drape forming and other plastic-container-forming operations. *Hydro-Chemie, Ltd., "Claridenhof," Dreikoenigstrasse 21, Zurich, Switzerland.*

Portable polyethylene-bag sealer

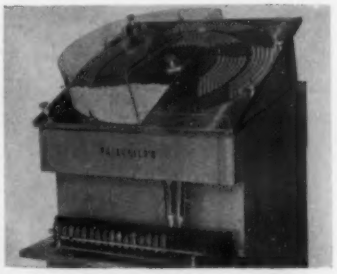
Errich International is on the market with the Speedy Auto Bag Sealer, a compact machine which reportedly will seal polyethylene bags at speeds up to 40 per minute. The new unit occupies three by three feet of floor space and weighs 60 lbs. The supplier suggests that the machine can be used in line with two other available units—a bag maker and a bag-opener and loader—to form a complete, compact polyethylene-packaging operation. Now being offered by the company is the Model 710 bag sealer, which accommodates bags ranging from 3 to 7 in. wide and 5 to 13 in. long. Other models handle other sizes of bag. *Errich International Corp., 35 W. 36 St., New York 18.*

New hot-melt-adhesive extruder

Designed to meet industrial needs for integrating solid adhesives into carton- and bag-making production lines is Potdevin's new Model SE hot-melt-adhesive extruder. The unit can be affixed to standard carton- and bag-making machines. It derives its power from the machine on which it is mounted via a flexible shaft. The extruder accepts solid adhesives and rapidly transforms them as needed into a molten state. The molten adhesive then is applied through a nozzle directly to the material to be bonded. Web speed controls the rate of adhesive flow. According to the supplier, the new unit is equipped to extrude molten adhesive at a rate of 1,000 ft. per minute of a ¼-in. line 0.003 in. thick. The company reports also that its machine can accommodate wet-strength kraft, polyethylene and other "difficult" surfaces. *Potdevin Machine Co., Teterboro, N.J.*

Faster tablet-filling machine

Fairchild's reports that its new Model 33 Electric Packer offers double the production rate of its Model 27. The supplier says that a minimum production rate of 40 filled containers per minute can be achieved when filling 100 items of a product the size of conventional aspirin tablets. Such a speed, claims the company, is only one-third of the machine's potential. A vacuum unit is available for removing dust particles from uncoated tablets prior to filling. Features of the filling machine are: two independently controlled vibrators, an adjustable-pitch top with 18 to 49 degrees of elevation and variable speed of 5 to 15 rpm. These features, the company points out, make the machine adaptable to almost any small, uniform product. According to the company, the Model 27 can be converted to the Model 33 at a nominal cost. *Fairchild's, Inc., 4864 Eagle Rock Blvd., Los Angeles 41.*



Toggle-action aerosol valve

A toggle-action valve for use on aerosol spray cans has been developed by A. Schrader's Son. An advantage of the valve, says its manufacturer, is that if the button is pushed or tilted in the indicated place, the valve dispenses only straight ahead, away from the user. The valve is available with interior-orifice diameter of 0.010 to 0.030 in., to provide for a wide range of viscosities and spray patterns. *A. Schrader's Son, 470 Vanderbilt Ave., Brooklyn 38.*

Polypropylene film and sheet

AviSun has begun commercial production of Olefane high-clarity, high-strength polypropylene film and sheet for packaging. The material is offered in thicknesses from one to 20 mils, for general packaging use and for thermoforming. Available in roll form, ranging from 2½ to 60 in. wide, the polypropylene can be supplied untreated or treated for

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Gaylord's approach to packaging doesn't stop with the corrugated box itself. We take a fresh look at your entire packing and handling cost picture, then tailor a program to your exact measure.

Regular cartons in big volume . . . engineered packaging . . .
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HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

printing, with either low-slip or high-slip coefficient-of-friction properties. Among the advantages claimed for the material are: clarity, high tensile strength, high temperature resistance, high moisture resistance, abrasion resistance, no stress cracking, insensitivity to atmospheric variations, great area coverage per pound of film and good machinability. *AviSun Corp. 1608 Walnut St., Philadelphia 3.*

Improved produce carton

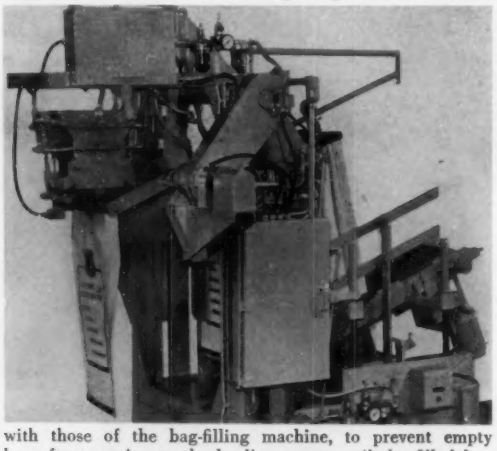
Improvements in the construction of the recently introduced Arm Lock produce carton are reported by Mead Packaging. The cited improvements are a redesigned lock flap and locking slot, which are said to provide easier, more positive locking on the underside of the paperboard container. Lock flaps also have been redesigned for the purpose of minimizing produce bruising caused by straight-line surfaces and sharp corners, the supplier says. The produce carton requires no overwrap, label, tape or heat-sealing equipment. It is claimed to cut produce shrinkage and spoilage, and to reduce packaging-material and labor costs. *Mead Packaging, Inc., Atlanta Paper Co. Div., Atlanta 2, Ga.*

Saran-coated paper tubes and cores

Spiral-wound paper tubes and cores with an outer coating of saran are being offered by Baxter. This treatment, the supplier says, provides a highly waterproof exterior and also makes the items resistant to many acids, alkalies and other chemicals. The finished product is claimed to be capable of withstanding heat up to 250 deg. F. Manufactured cut to length in diameters up to 36 in., the tubes and cores can be produced in colors or with a clear coating over a printed surface. *J. C. Baxter Co., Minerva, O.*

Automatic bag-hanging machine

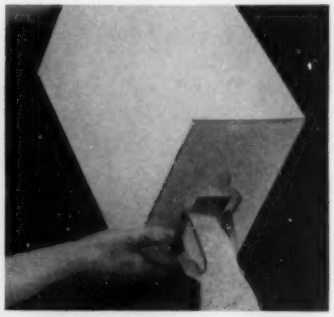
Union Bag has developed an automatic bag-hanging auxiliary machine which supplies empty open-mouth multiwall bags to a filling machine and places them on the loading spout. It is adaptable to all models in the company's I&C bagger series. Controls of the bag hanger are interlocked



with those of the bag-filling machine, to prevent empty bags from moving to the loading spout until the filled bag is released and also to prevent the spout from discharging its material until it has received an empty bag. Vertical and horizontal adjustments permit the bag hanger to handle a broad range of bag sizes (gusset or tube), the supplier says. To operate, any quantity of bags up to 400 is placed upright in the bag magazine. Sensing switches at the top and bottom of the leading bag keep it always in position to be removed. A curved "picker" opens the leading bag, after which rotating arms take the bag out of the magazine and place it on the spout. *Union Bag-Camp Paper Corp., 233 Broadway, New York 7.*

Siftproof box and leakproof pail

New items from Continental Can are a siftproof corrugated box with pouring spout (shown) and a leakproof, 5-gal. flaring pail with one-piece, one-seam, electrically welded body construction. The pour-spout box, designed for packaging of granular and powdered materials, is adaptable to conventional automatic packaging equipment. It is filled from the bottom. The corrugated spout opens and closes smoothly, and locks into position when it is opened. Box corners are sealed for siftproofing by knife-cutting the flaps shy of the score lines rather than using conventional slots. The flaps then are glue sealed. According to the supplier, surface of the stackable, rectangular box lends itself to fine color printing. Additional information is available from the company's Fibre Drum & Corrugated Box Div., 530 Fifth Ave., New York 36. The new 5-gal., electrically welded pail is claimed to be completely leakproof, suggesting its use in the packaging of such products as roofing cement, paint and other liquid or dry materials. Additional strength is given to the container, its supplier reports, via beads near the top and bottom and a compound-lined bottom with a five-thickness seam. Bail ears are riveted and doped to prevent leakage. *Continental Can Co., 100 E. 42 St., New York 17.*



Aluminum cans extruded at 120 per minute

A high-speed-extrusion press, which is claimed to produce 11-oz. aluminum beer cans twice as fast as formerly possible, has been developed by Bliss. It has been installed by Aluminum International. According to the supplier, high press speed (120 cans per minute) and a continuous strip-casting method developed by Aluminum International make the aluminum cans fully competitive with conventional three-piece steel cans. Higher production speed of the new machine is the result of a redesigned press drive, says the manufacturer. The conventional knuckle-joint action has been discarded in favor of an eccentric crank action which provides higher impact feed and allows more time for feed and ejection systems to function. On the machine, can bodies are made from ⅛-in. slugs of aluminum 2½ in. in diameter. Wall thickness of the extruded can is 0.010 in.; the can bottom is 0.025 in. thick. The finished can is 5½ in. tall. *E. W. Bliss Co., Canton, O.*

Low-cost, easy-open shipping bag

A low-cost, lightweight cushioned shipping and mailing bag, with an easy-close-and-open feature, is offered by Henry B. Katz Industries. Called Zip-Pak, it is made from single-face corrugated board. A cohesive latex adhesive applied to the single flap end and to a corresponding area on the outer closure-end wall of the bag permits simple, one-motion closing of the container. A tear cord built into the bottom of the bag facilitates opening without damage to contents. The bag bottom is of the fold-over type, to eliminate the possibility of glue failure through stress. According to the supplier, the new bag is 50% lighter and up to 30% lower in cost than competitive bags. *Henry B. Katz Industries, Inc., 859-879 Summer Ave., Newark 4.*

Economical short case sealer

Economy and ease of adjustment are among the features cited by National Equipment for its new short case sealer. The machine comes equipped with a packing table attached to the front. The same operator who packs the carton also

[*Continued on page 154*]

NIBROC® WHITE LEADS AGAIN!

First award for dry grocery division to Kings Kennel Dog Dinner, Topco Associates by Flexible Packaging Division, Continental Can Co. Process and line printed by letterpress on 50 lb. super calendered NIBROC WHITE *embossed.*

First award for non-frozen packaged foods to Aunt Jemima, Quaker Oats Co., by American Bag and Paper Co. Printed by letterpress on 50 lb. super calendered NIBROC WHITE.

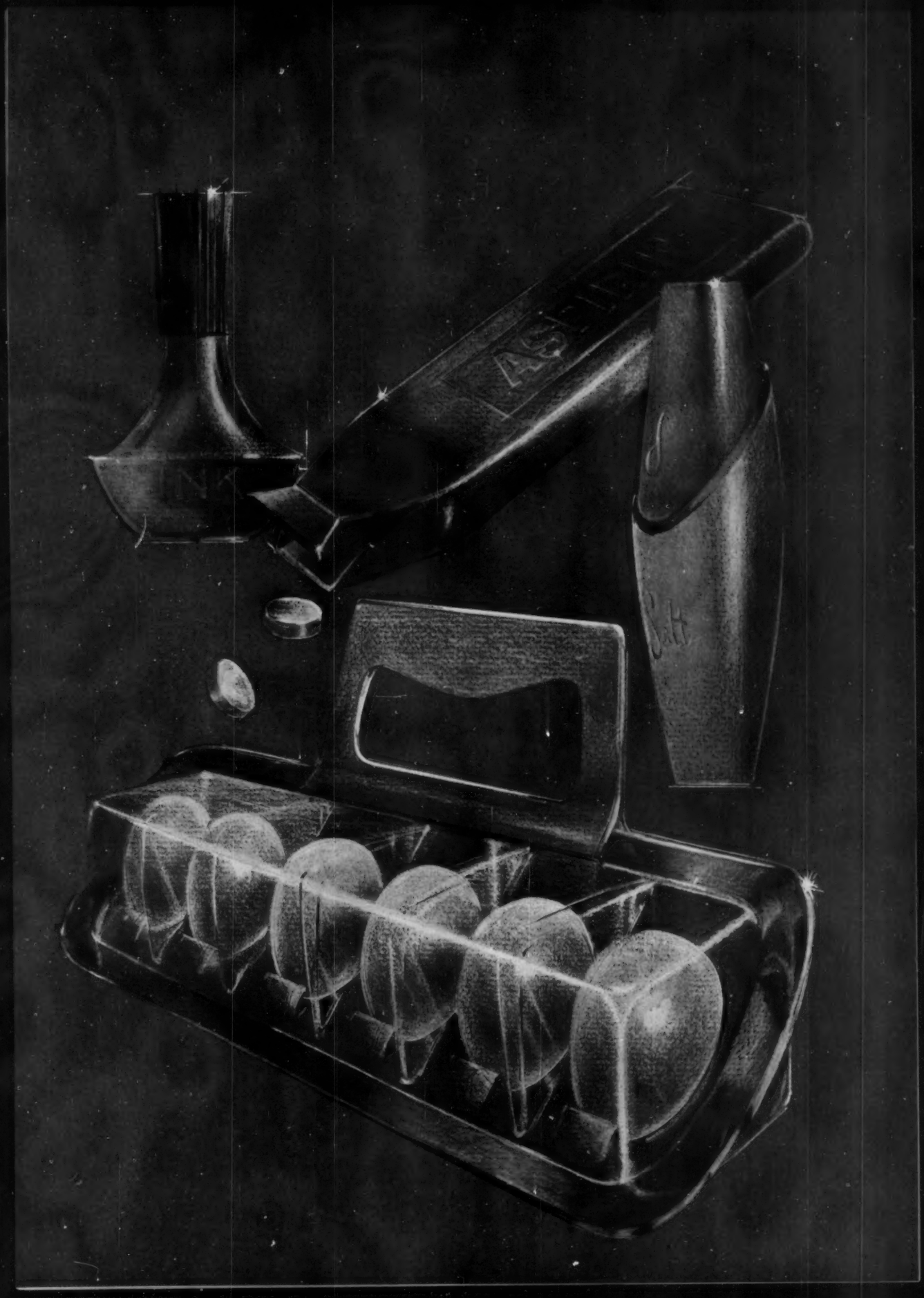
PACKAGING HISTORY REPEATS! As in 1956, 1957 and 1958 . . . top honors have been awarded to flexible packages using NIBROC WHITE in the 1959 National Flexible Packaging Competition.

Whether it is in the stiff competition of judging by packaging experts, or the tough on-the-shelf competition for the consumers' choice . . . NIBROC WHITE leads in attention, attractiveness, visibility, printability, workability, protection—and sales.

Give your quality products—coffee, cake mix, dog food, cookies, rice, tea, fertilizer, and others—award winning superiority. Send for free samples and information—write Dept. DR-2, Boston.

Another Quality Product from BROWN COMPANY

Mills: Berlin and Gorham, N. H.
General Sales Offices: 150 Causeway Street, Boston 14, Mass.



Wanted: packages with more "Hard Sell"

Many of the most persuasive of tomorrow's packages, like those on the left, will be made of plastics. Many of these will be made by creative package manufacturers of Monsanto plastics —just like the successful packages on the right that are making sales gains in today's competitive markets. Lustrex® styrene plastic, for example, with its sparkling transparency or bright colors in a wide range of strengths, can be precision molded or formed to your exact design specifications. The versatile properties of Monsanto Polyethylene help designers create colorful, lightweight caps, closures and bottles, strong and moisture protective coatings, high clarity film overwraps and bags. Crystal clear Vuepak® cellulose acetate, serves marketers requiring display packaging in window boxes, set-up or folding cartons.

How long has it been since you investigated plastics for your packaging? A special report is now ready to assist you in a current evaluation of plastics and your product's package.

Write for a copy to Monsanto Chemical Company, Plastics Division, Room 733, Springfield 2, Massachusetts.

LUSTREX: Reg. U. S. Pat. Off.

MONSANTO DEVELOPER IN **PLASTICS**

Monsanto

Planned Packaging moves merchandise

Sold and still selling!

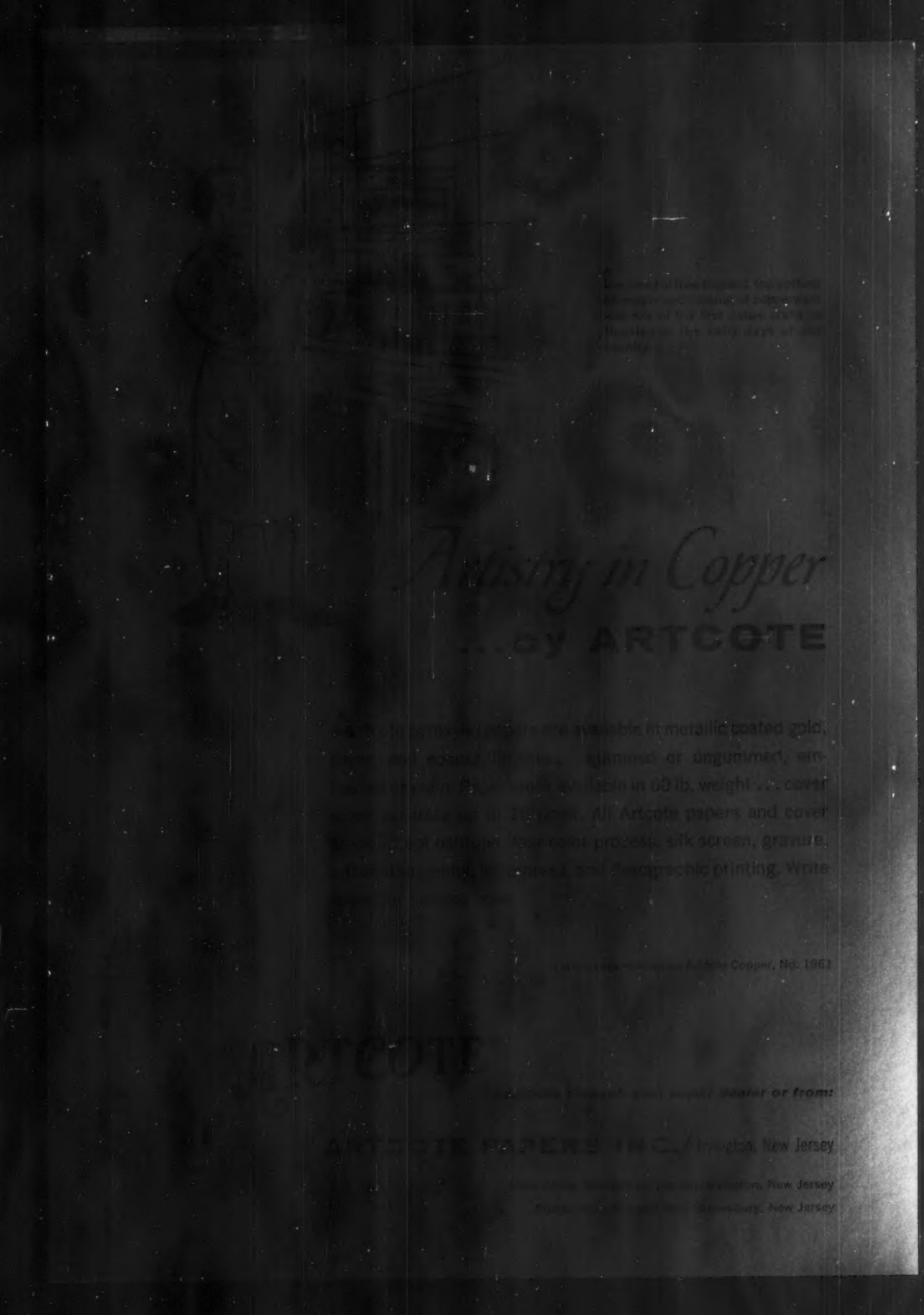
The corrugated container—workhorse of mass distribution—has long been known for its excellent product protection. Now it's fast becoming the Cinderella of packaging. Attractive, tinted background designs—even four-color half-tone printing, pioneered by Packaging Corporation of America—are transforming drab, rubber-stamped containers into eye-catching traveling billboards that sell their contents at every opportunity.

The skillful combination of art and package design is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.

Packaging Corporation of America

Administrative Offices: Grand Rapids, Michigan; Quincy, Illinois; Rittman, Ohio

Cartons • Containers • Displays • Egg Packaging Products • Molded Pulp Products • Paperboards


Artistry in Copper
...by ARTCOTE

U.S.I. POLYETHYLENE NEWS

A series for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

FEBRUARY, 1960 U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation 99 Park Ave., N. Y. 16, N. Y.

Packaging Notes

Skin suspension packaging with polyethylene film is being used with great success for shipping pottery and ceramic products.

The packages consist of a low density polyethylene skin suspension on a polyethylene-coated corrugated board. The coated board is perforated to allow a vacuum to be drawn through it. Then, products are placed on the board and 6-10 mil polyethylene film is heated, vacuum formed around the products, and heat sealed to the board. The completed unit is packaged in a corrugated container for shipment.

This packaging technique has cut gross shipping weight by 40%, and in-transit breakage has been reduced by more than 60%.

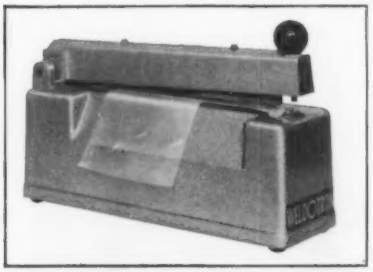
Now... polyethylene packaging for people!

A rectangular-shaped tent of polyethylene film is currently being marketed for use at football games and other outdoor sporting events. The tent is opaque except for a clear polyethylene viewing window. The tent keeps heat in — rain and snow out.

Polyethylene film packaging for carbon-steel tubes has proved to be economical for a New Jersey refinery.

Polyethylene film is wrapped around a cluster of tubes and taped securely closed. Wrapping with polyethylene in this way protects the tubes from rust and corrosion during storage.

Another advantage: packaging cost is said to be one-eighth that of the military-style moth balling the company formerly used.



A polyethylene bag sealer for small lots and laboratory use is now being marketed by a New Jersey Company.

The new compact polyethylene heat sealer is only 4 inches wide and 12½ inches long. It is portable and may be plugged into a standard 110 to 120 A-C outlet. The sealer will produce seals up to eight inches long. Sealing time is one-half to two seconds, according to the thickness of the film.

Improved Film-Clarity Meter Designed by U.S.I. Chemist

New Instrument Eliminates Human Error in Testing Clarity

A research chemist at U.S.I. has designed in conjunction with A.S.T.M. a new light transmittance meter which eliminates human error in testing clarity of polyethylene film. The instrument determines the relative amount of light transmitted through any film specimen at essentially a zero angle of scatter.

This new low-angle light transmittance meter was developed at the Polymer Service Laboratories of U. S. I.

The new meter is designed to replace the optical bench test... a method which depended on the operator's eye-sight. With the new meter, test results are recorded automatically, without relying on the judgment of the operator.

Operation of the Meter

Basically, the meter consists of a light source which is concentrated through a sample of film onto a light-sensitive cell. The cell is attached to a galvanometer which measures the amount of light passing through the sample to be analyzed.

Swatches of polyethylene film 1.5 mils thick were used as standard gauge samples by U.S.I. Care was used in handling the samples, since fingerprints on the film could cause variations as much as 10% in light transmittance.

Meters of this type are currently being evaluated by other laboratories in an A.S.T.M. round robin test.

New Polyethylene Packager Cuts Labor Costs by 50%

A west coast manufacturer recently announced a low-cost packaging machine which fills, closes and produces a finished bag in a single operation. It is designed to use bulk rolls of polyethylene film, and packages items which range in size from pencils to shirts.

The machine is said to cut packaging labor costs up to 50% through speed and efficiency of operation. The unit eliminates time-consuming hand loading of pre-manufactured bags. It reportedly eliminates set-up time, since no adjustment is necessary when changing from large to small size bags.

It is also reported that the machine can be operated by personnel who have no previous training or experience in packaging.

Now... Disposable Boots of Clear Polyethylene!

Low in cost, but high in protection are features claimed for newly introduced clear polyethylene boots. These disposable boots are easily pulled over regular shoes, and can be worn open at the top or closed with a rubber band.

Uses suggested for these inexpensive boots include biological and atomic laboratories where control of contaminated elements is vital.

The manufacturer currently packages his product in rolls of 50 and 100, and says average cost is less than 14¢ per pair. The boots are watertight, and last for several hours before wearing through, it is claimed.

Polyethylene Pipe Solves Difficult Tamping Job

Polyethylene pipe has been put to an interesting use in blasting operations for a new Potomac River water treatment plant near Washington, D. C.

A total of 62 holes were drilled to prepare a 110 ft. high cliff for blasting. Fourteen of these holes were from 35 to 96 feet deep and drilled at an angle of 32°. Since the density of the rock formation varied, there was a chance that the bore holes would swing out of line by several feet. Of major concern was the problem of loading and tamping blasting charges to the required depth in the crooked holes. Conventional, non-flexible, metal rods quite obviously would not do the job.

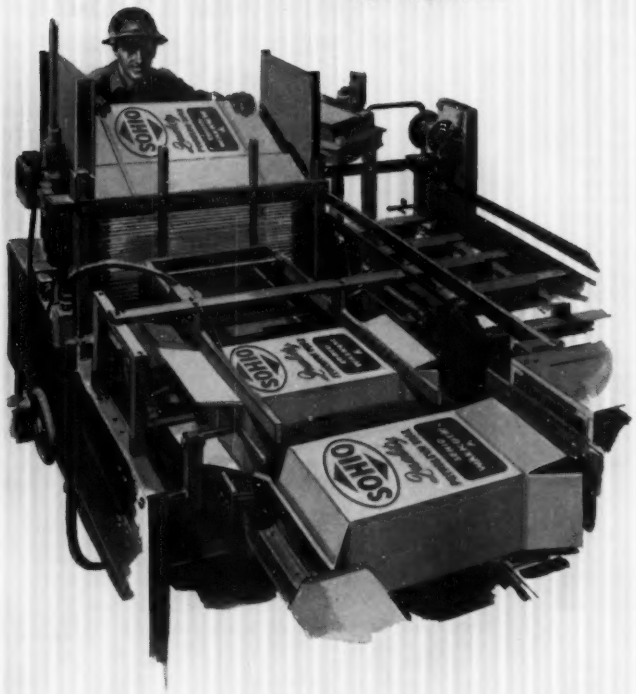
The blasting contractor solved the problem by using 1½" intermediate density hollow polyethylene water pipe. The highly flexible polyethylene tamping "pole" was made up of several sections of pipe.

It easily took the bends in the holes and was used successfully to tamp all required blasting caps and powdered charges in place.

DO YOU HAVE a new polyethylene packaging development you'd like the industry to know about? Make it routine to send your information on new developments to U.S.I. POLYETHYLENE NEWS.

Address the Editor,
U.S.I. POLYETHYLENE NEWS, U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp., 99 Park Avenue, New York 16, N.Y.

These boxes do everything but balk...



H & D corrugated boxes for shipping Sohio wax start through this machine knocked down. They're set up, packed and sealed—automatically. Would precision packaging speed up your operations? Better see H & D.

Hinde & Dauch Division

West Virginia Pulp and Paper

Authority on Corrugated Packaging • Sandusky, Ohio
17 Factories • 42 Sales Offices

Sounding Board

WE ASK THE READERS

Do you favor large, single-unit packaging equipment or multi-unit machines? Why?

G. M. Woodruff
Manager
Equipment Development Service
General Foods Corp.
Port Chester, N.Y.

In answering a question of this kind, it should be recognized that there is never a completely all-white or all-black answer to each given situation, since these must be studied on their own merits. In general, General Foods favors the large, single-unit or integrated packaging equipment, where there is sufficient volume to justify the cost, over the multi-unit machines. There are many reasons for this:

1. Integrated units are usually cheaper to install.
2. The floor space required for integrated machines is usually substantially less and in a constantly expanding business it is frequently important to be able to remove multiple-unit machines and replace them with integrated machines to provide the space necessary to carry on another operation.
3. Integrated machines are invariably more efficient and can be operated at lower cost in total.

The application of integrated, high-speed packaging machinery should not be considered where it must be changed for different sizes with any frequency—once every month or two. In cases of this kind we find it highly desirable to have a complete line for each size which is geared to the individual capacity requirements.

Edward M. Wixted
Manager, Industrial Engineering
Schering Corp.
Bloomfield, N.J.

The length of production runs, a wide range of tablet sizes and shapes, and the large number of different container sizes combine to make pharmaceutical packaging a very complex problem.

So, for packaging equipment, we purchase and install slow-speed or medium-speed lines. These lines are designed for the ultimate in flexibility. Thereby, we are equipped to handle low- and medium-size production volumes in a wide range of products and packages.

However, our motivation and drive are toward the high-speed, single-container packaging line. When the volume of a single container is large enough to warrant a high-speed line, we install the single-purpose line. Here, we know that we obtain maximum output and minimum cost. Minimum down time, no change-overs and minimum mechanical adjustments combine to increase output and reduce costs.

Let us take an example. When the Coricidin 25-tablet package was introduced in 1951, it was packaged on a general-purpose line at 40 vials per minute. The yearly volume was about 200,000 vials. In October, 1959, we installed a single-container line to handle this package at a rate of 140 vials per minute. During 1960, our yearly volume will be in excess of 5,000,000 vials. While this line is our first single-container line, we hope it is the first of many similar lines.

To summarize, the variety of tablet sizes and shapes, and the number of container sizes demand extreme flexibility in packaging equipment. Yet, the most important factor in determining the type of packaging equipment to be installed is production volume. When the volume is big enough, we go for the high-speed, single-container packaging line.

James A. Moran
Senior Packaging Engineer
South Wind Div.
Stewart-Warner Corp.
Indianapolis

This question is indeed a timely and controversial one for us because we are faced with finding the answer to this problem at this time.

We have consulted with machinery specialists, these past months, who have willingly come into our plant, provided us with elaborate survey reports outlining the benefits we would derive if we were to purchase a single-unit, a multi-unit or, possibly, combinations of the two packaging machines. We read these reports with enthusiasm, but as we near the end of these survey reports we find, in effect, this statement—"your particular problems are common to the industrial packaging field in that your production involves large numbers of short and varying runs, with many changes of container sizes, accompanied by [*Continued on page 171*]

HEADACHE
how to attach a removable promotional message to a deluxe dispensing bottle.

REMEDY
a rich-looking, gold foil booklet tag and a gold elastic cord to blend with the gold cap and printing on the bottle.

RESULT
a successful promotion for Burroughs Wellcome & Company.

IDEAS ADD IMPACT AT POINT OF SALE.....

when you specify Dennison Tags

Elastic-cord stringing is now extending the advantages of tagging to such hard-to-tag items as bottles, jars, tools, household accessories, sporting goods.

Increase the sales appeal of your tags with Dennison's unique combination of merchandising experience, creative services and production facilities. Other Dennison extras include equipment for imprinting variable information, the broadest range of tag fastening devices, and family-designed labels for any surface. Creative suggestions and quotations delivered promptly.

Dennison

Helping you compete more effectively

FRAMINGHAM, MASSACHUSETTS
Offices in Principal Cities

ADVERTISEMENT

Andre and Natalie Harley, photographed recently during a visit to their Paris agents, S.C.E.R.A.

We see here samples of the world famous Lanvin line. Manufactured on specially made board for Lanvin, these cartons are lithographed and embossed by the House of Harley.

Created under the direction of Sy Wassing, art director of Revlon products, the Living Curl label is manufactured in four colors on silver foil and embossed in the 34 Hubert Street plant of the House of Harley Printing Company.

An American Success:

The Harley Story

It was January of 1948. Most New Yorkers were talking about the death of Mark Hellinger, "A Streetcar Named Desire," Vishinsky, Henry Wallace's third party, and a 25.8" snowfall that still cluttered their streets.

In one corner of this vast sprawling city, a young imaginative couple spoke of nothing but the future. For they had just invested their entire holdings in a life long dream. Their dream was designing and manufacturing the world's most beautiful packages. The couple—Natalie and Andre Harley.

Today, that dream is a reality. The House of Harley has risen and is accepted as designers, creators and manufacturers of the world's most beautiful folding boxes, box wraps, wrapping papers and labels.

It's a real American success story. One whose fascinating details will be unfolded in this and subsequent issues of Modern Packaging. This story proves that today, in the middle of the 20th Century, a young couple with faith in itself and its enterprise can climb to the top. It proves too, that no matter how competitive the industry, the priceless ingredients of technical knowledge, inborn taste, hard work and honesty can be blended to help achieve this summit.

The climb to the top was not done by words, but by deeds. By producing results which others have tried to surpass . . . but have not yet been able to equal.

Let's go back to 1948 when the House of Harley was founded by this young European couple.

This million dollar enterprise was started in a tiny office with a "man Friday." Original capital consisted of knowledge, imagination, enthusiasm . . . and $1000 borrowed from a friend.

From the start, "The House of Harley" fired the imagination of the cosmetic and perfume industries with new designs and concepts in quality packaging. But success did not come overnight.

Days grew into weeks, and weeks into months. Inquiries and occasional orders arrived with each mail. The early orders were small, requesting special art work or small runs of display boxes and window displays. But every inquiry and every order was received and treated with enthusiasm and a desire to produce the best. It was this painstaking attention to detail and craftsmanship that paved the way toward bigger and more complex packaging responsibilities. Overwhelming customer acceptance opened the way to House of Harley's unquestioned leadership in producing some of the world's finest packages.

Natalie Harley had studied art both in France and in the United States. She was born with a sure taste which she has developed to its full maturity in her many achievements for the long list of top accounts which the House of Harley handles today. Accounts that include such names as Lanvin Parfums, Elizabeth Arden, Helena Rubinstein, and Revlon.

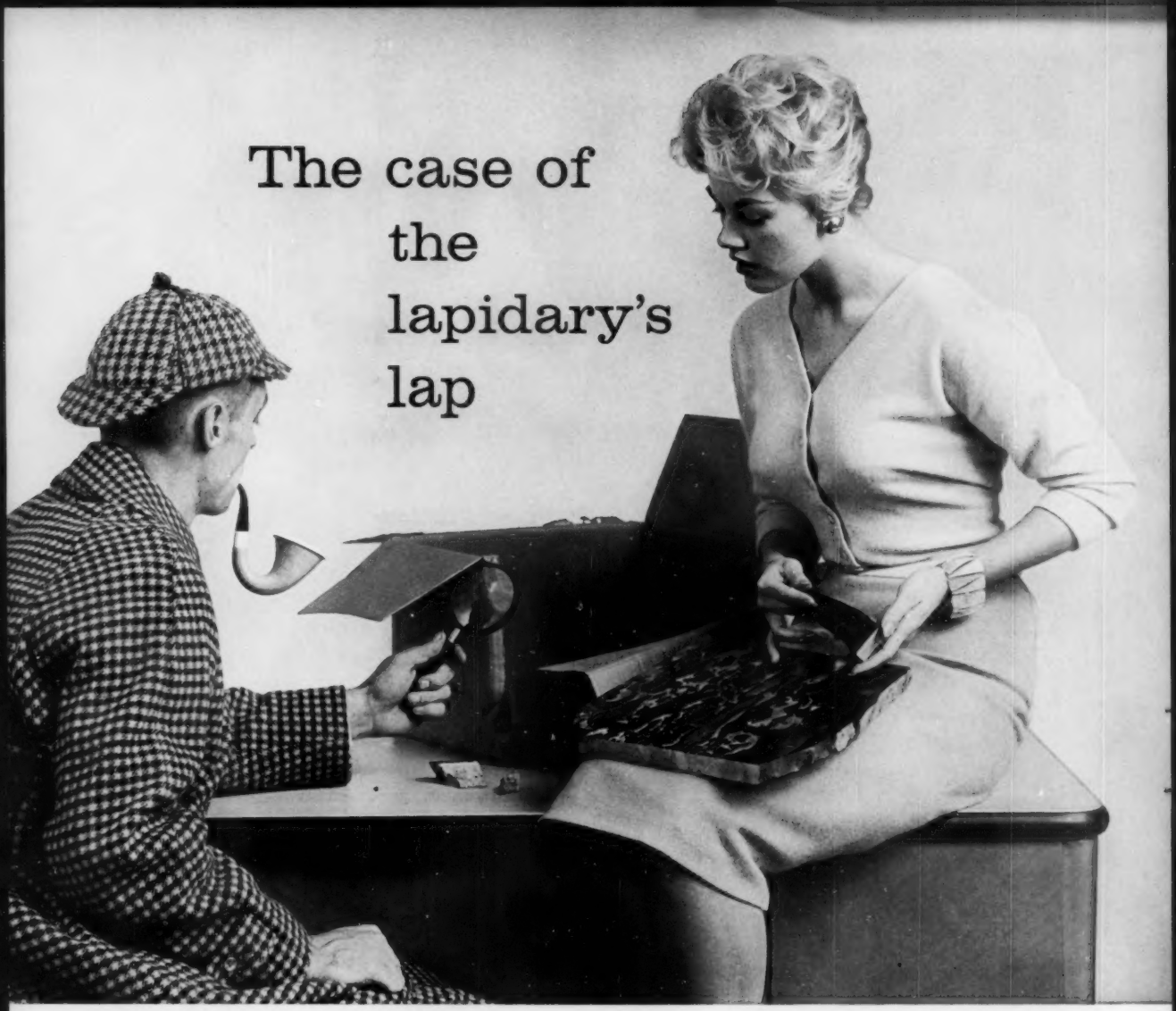
Andre Harley, since his early youth always has been attracted to printing and graphic arts. He was a journalist, a public relations man, an advertising man, and, above all, a salesman. This is borne out by the manner in which he placed the name of "Harley" on the international scene and built the "House" into the leading establishment it is today . . . standing among the best printers of luxury packaging.

In the next issue, you will read about the House of Harley, as it moved "On the Way Up" and how the Harleys introduce glitter, flitter and fancy novelties into the field of packaging.

Of course, if your packaging needs are more imminent . . . don't wait until next month, but write, wire, or phone today. The House of Harley, Inc., 15 East 40th Street, New York 16, New York Cable address—Harleyart New York MU 6-2984.

Among the most recent and most elegant achievements by the House of Harley are these new D'Orsay folding boxes, printed in one color gray. The shield is gold bronzed, and the whole carton is embossed. This is a typical example of the achievement of elegance and simplicity for superlative products by the House of Harley.

The case of the lapidary's lap



FEARLESS FULLER: What do you know about laps, Miss Watson?

MISS WATSON: Well, I've sat on quite a few.

FEARLESS FULLER: I'm referring to glued laps used on corrugated boxes, not men's laps, Miss Watson.

MISS WATSON: I suppose this has something to do with your latest case.

FEARLESS FULLER: Yes, I call it the case of the lapidary's lap.

MISS WATSON: What's a lapidary, Fearless?

FEARLESS FULLER: He's a person who deals in precious and semi-precious stones.

MISS WATSON: Pray tell, what happened to the lapidary's lap?

FEARLESS FULLER: Well, it seems he was sending some finely-polished agate to a customer and shipped it in this corrugated box.

MISS WATSON: And . . . ?

FEARLESS FULLER: Well, the lap adhesive was not Fuller's and the box came apart at the seams. Naturally the polished agate fell to the floor and ruined the lapidary's work.

MISS WATSON: I imagine he was disenchanted with his box maker after this occurred.

FEARLESS FULLER: He was ready to stone him to death.

MISS WATSON: How did you solve the problem, Fearless?

FEARLESS FULLER: I recommended that the box maker switch to Fuller's Adhesive #565, the finest glued lap adhesive around, and the problem was solved.

MISS WATSON: Oh, Fearless, you're amazing.

FEARLESS FULLER: Elementary, my dear Miss Watson. A Fuller man always knows the solution to adhesive problems.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your near by plant.

H. B. Fuller Co.

INDUSTRIAL ADHESIVES

St. Paul, Minnesota

St. Paul, Minn. • Atlanta, Ga. • Buffalo, N.Y. • Chicago, Ill. • Cincinnati, Ohio
Dallas, Tex. • Kansas City, Mo. • Linden, N.J. • Los Angeles, Calif. • Memphis,
Tenn. • Portland, Ore. • So. San Francisco, Calif. • Tampa, Fla.
Also Winnipeg, Can. • Fuller Adhesives International, Nassau, Bahamas

Elegance and simplicity were achieved on these Revlon face powder boxes and outside cartons printed in one color and embossed. Wraps and folding boxes were manufactured by the House of Harley, set-up boxes by F. N. Burt.

Two of the most popular items in the exclusive Antoine line are the Bain de Soleil and the Hair Fixative. They were produced on the presses of the House of Harley.

*The Harley Story**

On the way up

How does a company build a multi-million dollar business from a modest $1000 investment? How does a new arrival to so competitive an area of activity as the box and label business stand up and survive?

The House of Harley went through many growing pains to reach the position of prominence they now hold. Their fine European education, undeniable good taste, and artistry in new ideas gave Natalie and Andre Harley many opportunities to specialize in package design. But the Harleys are printers at heart and knew they must exercise control over every package to be sure it was the best.

As no reliable company changes suppliers overnight, the Harleys realized at the outset they could not go before the industry with "just another box". They had to find a concept so vital and exciting that it would capture the imagination of the package consuming field. Yet it had to be complicated enough to eliminate competition at the start.

And so in 1948, they introduced "Glitter" on folding boxes. This was an extremely complex process that brought with it many production problems. But by 1952, The House of Harley was producing "glitter" boxes by the millions, and had brought inquiries in from a great many top corporations.

Simultaneous with this "glitter" promotion came some of the oddest shaped and most original boxes the packaging market has ever seen. These included concertinas, trains, houses, and boxes with three dimensional pop-ups. These innovations were always designed for production runs with automatic or hand gluing.

And so the pattern was established. The Harleys knew what the packaging field hungered for and they fed this vast appetite with more of the unusual . . . and impossible.

The efforts of this imaginative team did not go unnoticed. In 1955, WAVD-TV in New York devoted a half hour to the Harleys on its "Success Story" program, and feature articles on the House of Harley appeared in both the New York Herald Tribune and the New York World Telegram. In addition, illustrated articles on their projects appeared in Great Britain, West Germany, France, Italy and Spain. The latter group helped open the international market that today includes offices in Paris, Brussels, Montreal and Milan . . . all of which are equipped to reproduce Harley-made models.

It was in 1955 they introduced an oval elliptical folding box claimed to be the fastest closing folding box ever made. In order to achieve results such as these, the Harleys have trained their own crews in all phases of production and manufacturing. Their art studios employ as many as ten artists who are trained as mechanical engineers, creative artists, and finished art draftsmen.

Shown here are Compact and Lipstick boxes designed by Seymour Kent, art director for Lehn & Fink. These rich-looking folding cartons were printed on the finest bristol board, gold bronzed and embossed by the House of Harley.

Elizabeth Arden's Sun Gelée and Sun Pruf are presented here in their new refreshing look as they are being made for the world famous cosmetician and perfumer by the House of Harley.

By 1957 The House of Harley's domestic operation was billing over a million dollars annually in unusual packages. It was decided at this time to start their own printing and manufacturing operation in order to maintain complete control over production of "the world's most beautiful folding boxes, box wraps and labels".

In the next issue, you will see how the House of Harley grew to become one of the world's top printing companies. If you'd like to know sooner, don't wait. Write, wire, or phone now and we will give you the complete Harley Story. The House of Harley, Inc., 15 East 40th Street, New York 16, New York. Cable address: Harleyart, New York. MU 6-2984.

ADVERTISEMENT

High-speed STOKESWRAP produces up to 240 packages per minute

Designed to deliver maximum production in minimum space, the new four-tube Stokeswrap can form, fill and seal as many as 240 flexible packages per minute. One four-tube Stokeswrap costs less than . . . yet equals the output of . . . two conventional two-tube units. It is ideally suited for plants where floor space is limited, where increased production is desired and a replacement for obsolete equipment.

Depending on requirements, the four-tube Stokeswrap will form "pillow" or "four seal" types of packages from printed or unprinted roll stock of most heat sealable materials and laminations. Each tube has its own electric eye registration to assure proper positioning of the package design. Either conventional or impulse sealing can be provided with sealing and cut-off achieved in one simple operation. Webs are held in constant tension to eliminate jamming and other troublesome operations.

Capacities range from one gram to three ounces depending on product characteristics. Package sizes can be handled up to 2⅜" x 6¾". Special attachments for strip packaging, gas-fill packaging, coding, imprinting and hole punching can be supplied.

For complete information, write to:

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
FMC Packaging Machinery Division
Stokes & Smith Plant
4904 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

Plastic-coated glass makes the ideal pressure package

Only Owens-Illinois pressure packages have this bond of plastic to glass

THE PLASTIC IS MORE THAN a jacket around the bottle in an Owens-Illinois pressure package . . . it's bonded to the glass as a part of the container itself. It won't peel off.

This permanent bonding of plastic and glass gives you a tough and handsome package which will never alter your product. For glass is inert to chemicals . . . is flavorless and odorless . . . and keeps what it contains at peak of effectiveness.

These colorful and sturdy Owens-Illinois pressure packages come in a variety of shapes and sizes. Choose from a wealth of stock containers, or let O-I create a new design just for you.

Every O-I container can be permanently decorated with Applied Color Lettering.

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO
PACIFIC COAST HEADQUARTERS • SAN FRANCISCO

THE EXTRA * THAT GIVES

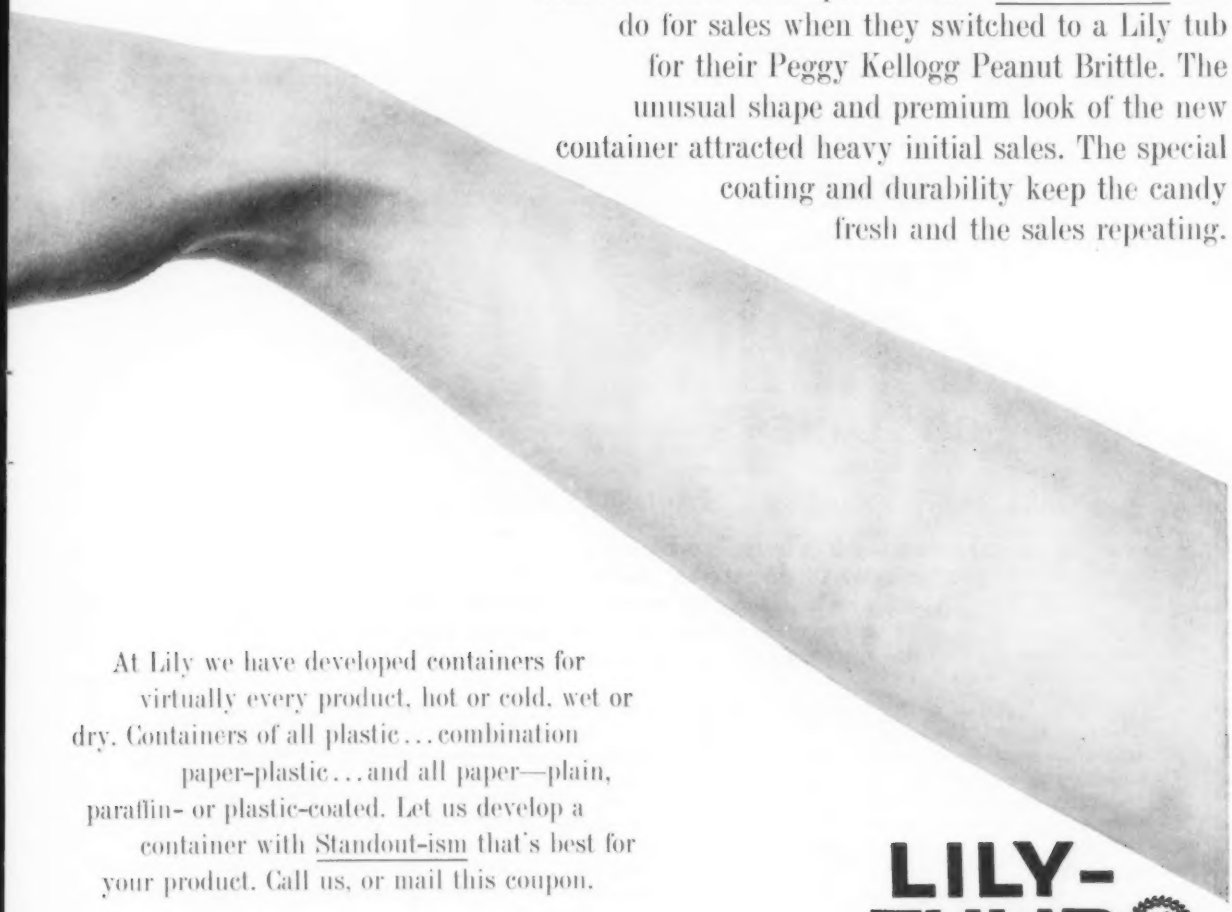
Peggy Kellogg
QUALITY ASSURED
• MADE WITH DAIRY BUTTER
• CHOCK-FULL OF FRESH ROASTED PEANUTS
QUALITY STANDARDS
BY SEARS LABORATORY
butter peanut brittle
THIN & CRUNCHY
INGREDIENTS: PEANUTS, CORN SYRUP, SUGAR, BUTTER, SALT, SODA AND LECITHIN
SOLD BY SEARS, ROEBUCK AND CO. CHICAGO, ILL. AND OTHER LEADING CITIES
thin buttery brittle
Peggy Kellogg
crisp and crunchy
BUTTER PEANUT BRITTLE

*STANDOUT-ISM

THE SELLING ADVANTAGE

One ingredient added to your product can give you the edge on competition. It's Standout-ism, a look that's built into every Lily container.

Sears Roebuck & Co. proved what Standout-ism can do for sales when they switched to a Lily tub for their Peggy Kellogg Peanut Brittle. The unusual shape and premium look of the new container attracted heavy initial sales. The special coating and durability keep the candy fresh and the sales repeating.



At Lily we have developed containers for virtually every product, hot or cold, wet or dry. Containers of all plastic... combination paper-plastic... and all paper—plain, paraffin- or plastic-coated. Let us develop a container with Standout-ism that's best for your product. Call us, or mail this coupon.

LILY-TULIP

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World Report

Abstracts from foreign packaging magazines

FRANCE

Ideas from Salon de l'Emballage

Held for the first time under the sign of the European Common Market, the 13th Salon de l'Emballage, the French packaging show held in Paris during October, was hailed by *Emballages* (France) as the start of a whole new course in changing techniques among all the countries of Europe, demanding a vast gamut of new realizations in package protection and merchandising. More than 500 exhibitors displayed the latest machinery, materials and packaging accessories. "While the Paris show witnessed the birth of no revolutionary ideas, nevertheless there were a number of developments worthy of special notice," said *Packaging Review* (England). Among the machines singled out for mention by the British publication were: the latest in automatic vacuum- and gas-packaging equipment; a new machine that takes material from a reel for making and filling flexible tubular packages for liquids; a new semi-automatic impulse sealer for plastic bags; a dual-purpose bag-closing and bag-making machine for the small manufacturer; a machine that makes pillow-type packs of thermoplastic materials, either as a chain or as individual units, and a new bottle filling and closing machine.

Also described was a line of low-pressure polyethylene containers that reportedly are capable of withstanding sterilization temperatures of 120 deg. C. The containers are supplied nested to the user, who can weld on lids of either low-pressure polyethylene or polyethylene-coated aluminum foil after filling. These containers can be made in a wide variety of shapes and sizes, including miniature bottles, filled and sealed from the base and having replaceable stoppers. The thin-wall containers can be supplied at low cost, making them suitable for single servings of jams and jellies. In large sizes they are recommended for many kinds of prepared food products, including frozen foods.

GERMANY

Cellophane statistics

In a review dealing with different types of regenerated cellulose film and the international marketing system, a table dealing with the per capita consumption and total production of cellophane has been published in *Die Neue Verpackung* (Germany).

	Consumption per head	*Production per country in 1958 in tons*
West Germany	390 gm.	19,455
East Germany	23 "	(Approx.) 500
Austria	114 "	798
Switzerland	410 "	2,000
France	445 "	19,539
Great Britain	820 "	47,895
Belgium	550 "	5,248
Sweden	415 "	3,116
Finland	170 "	700
Holland	190 "	1,250
Italy	150 "	7,620
Spain	50 "	1,550
Portugal	80 "	600
Jugoslavia	35 "	750
Poland	40 "	1,200
U.S.A.	900-1,200 "	201,500*

* Ed. Note: U. S. figure added by MODERN PACKAGING.

SWEDEN

Empty milk bottles in paper sacks

Sturdy paper bags for transportation of new empty milk bottles from glass factory to dairies have been introduced in Sweden to replace wooden or metal crates. According to *La Papeterie* (France), dimensions are derived from previously used containers so that the sacks may be handled on existing conveyor equipment. Each bag is designed to carry 16 bottles and its width is such that a tight square pack is formed when the last bottle is inserted. When fully loaded, the sacks require less space than conventional crates and are much lighter in weight. A 15-ton railway truck can now carry 33,000 bottles in bags instead of 18,360 packed in wooden crates. The wet-strength sacks reportedly can be stacked in the open, covered with a tarpaulin to keep them clean. The sacks also save storage space in the factory.

FRANCE

Double bubbles for powders and/or liquids

A new French machine forms semi-rigid plastics bubbles from two or three webs of film and fills them with powders or liquids at a speed of 1,800 to 2,000 an hour. As described in *Packaging* (England), the bubbles are formed and filled, a pair at a time, and are ejected from the machine in a continuous double-row strip, or cut from the web into separate units. The makers of the equipment say that plasticized or unplasticized polyvinyl chloride for foods and polyamide film can be used to form the bubbles. When the bubbles are made up from three webs of film, the center web divides them into halves so that a different product or a different measure may be filled into either section. Two webs can form single-dose units and four webs can be used to make bubbles with a double dividing wall.

In one machine cycle it is possible to make two bubbles containing four different liquids or powders, each section filled to a different measure. One application may be for salad oil and vinegar, not mixed until the bubble is cut open. Or if the bubble is pierced on one side only, just one product may be extracted.

A model will be available soon that reportedly will fill powder into one half of each bubble and liquid into the other. Machines may also be equipped to fill granular and paste materials. Webs are drawn together from separate reels and fed through heating equipment. Filling is through nozzles positioned between the plies of film.

CANADA

Dielectric sealing sets water adhesives fast

Experiments in the high-frequency, radio-wave method of sealing water-base adhesives are highlighted in an article on adhesive developments, appearing in *Canadian Packaging* (Canada). In this process, the high-frequency energy reportedly causes water from the adhesive to boil and thus makes the adhesive set faster. The sealing equipment is described as a high-frequency radio generator which supplies its energy to two electrodes or antennas in a compression section. Limited production runs by this method have already been under way in the U.S., according to the article, which describes a demonstration for the sealing of waxed fish cartons. A special liquid-resin adhesive was applied to the filled waxed carton which was passed under compression through the dielectric field. The water in the adhesive heated to a boiling point and the generated heat melted the wax on the two contacting surfaces. This per-

mitted the resin adhesive to penetrate board fibres, forming a strong, positive bond. The sealed carton was said to show no external dewaxing, thereby indicating possibilities for application to printed cartons used without overwraps. The process is also being studied, according to the article, for use in the manufacture of waxed cartons on both straight-line equipment and right-angle machines.

FRANCE

Permanent technical packaging exhibit

Packagers from everywhere are invited to visit the permanent exhibit at the French Packaging Laboratory (l'Institut Français de l'Emballage et du Conditionnement), 3 Rue La Boetie, Paris 8, fourth floor, open every day except Saturday and Sunday from 9 to 12 a.m. and 2 to 6 p.m. The aim of the exhibit is to display materials of all kinds and to provide technical guidance in the making of packaging decisions, according to *Techniques d'Emballages* (France). From a technical standpoint, it is pointed out, a real asset of the exhibition is that visitors are always accompanied by one of the laboratory's staff members, prepared to give complementary information on machinery requirements, economic aspects, etc., needed in solving particular problems.

ENGLAND

EPF modulus system of package dimensioning

First of the technical and economic surveys of packaging subjects undertaken by the European Packaging Federation will be a report on a modulus system being drawn up for a systematic dimensioning of packages based on standardized intra-European pallets. According to *Institute of Packaging Journal* (England), the Modulus Committee, under the chairmanship of I. Amundsen of Norway, has been working on the study for some years and a full report will probably be given at the next general assembly of EPF in Stockholm, September, 1960. The scheme would give full utilization of the loading surface of the three pallets recommended by the International Organization for Standardization, *viz.:* 800 by 1,000 mm., 800 by 1,200 mm. and 100 by 1,200 mm. Additionally, the committee will recommend a number of dimensions for transport packages proposed by the Swiss Packaging Center, in which work the Swiss Federal Railways played a vital part. The report will include tables giving modulus measurements, with corresponding interlocking pallet patterns for the three pallets as well as for the supplementary rectangular and round package dimensions with interlocking patterns for the 800 by 1,200 size.

GERMANY

Sterilizing plastic bags with ethylene oxide

In instances where the nature of the product does not permit the use of heat, a sterilization method using ethylene oxide in gaseous form is described in *Die Neue Verpackung* (Germany). The gas can be applied, the article states, either in an autoclave, the product packed in a heat-sealed film bag suitable for the transmission of gas, or the gas is flushed into the bag which is closed immediately afterwards. In both cases the gas may be inserted at a heightened temperature and pressure, it is stated. Tests reportedly indicated that with the application of gas during a reasonable period and at ambient temperature and atmospheric pressure, the method is feasible to kill sufficient bacteria (and even difficult-to-destroy spores) for practical use with satisfactory results. The method is suggested for sterilizing foodstuffs, surgical instruments, bandages, medicaments, hospital laundry and bedding, and shoes. In addition to plastic films, the report states that the method can be used for plastics containers made by injection molding, blow molding or vacuum forming. The method is also said to be feasible to sterilize in separate operations—that is, product and package separately, if conditions are fulfilled to prevent the possibility of fresh infestation.

THE NETHERLANDS

A fund for packaging research

Verpakkings Centrum (Institute of Packaging) in the Netherlands has decided to found an organization to promote the development of packages, packaging materials and packaging methods. Research is to be financed by gifts and donations from industry sources interested in the project and a sizable sum has already been collected for the organization, according to *Verpakking* (Holland).

FRANCE

Review of French aerosol progress

The entire October, 1959, issue of *Parfumerie Cosmetique Savons* (France) is devoted to aerosols, pursuant to the First International Symposium on Aerosols held in Paris last June. The reader will find in this number illustrations showing latest design realizations in French aerosols and a wealth of technical information on such subjects as chemical problems posed by perfumes in aerosols; application of aerosols in the pharmaceutical industry; determination of granulometric characteristics of aerosol dispersions; protective coatings for aerosols; possibilities for standardization in the aerosol industry; discussions on propellents, plus a description of operations in one of France's leading aerosol packaging plants.

ENGLAND

Finding a designer will cost £3 3s ($9)

The Council of Industrial Designers in Britain announced in the *Institute of Packaging Journal* (England) that as of Jan. 1, 1960, it will make a charge for the services of its Record of Designers. Three guineas will be charged for short lists and where additional work is required a special fee will be quoted. No charge, the report states, will be made when no constructive help is given. The Record of Designers was established 14 years ago as a free service. In the early years, 40 inquiries a year were dealt with; today they have risen to 750—too great a volume, says the council, to carry without making a charge. The record now carries more than 2,250 names of designers, qualified by interview and submitted examples of work.

FRANCE

French Institute reference file on machinery

Suppliers of packaging machinery in all parts of the world are invited to send illustrations and descriptions of their equipment, with prices wherever possible, to the Institut Français de l'Emballage, Section Machines, 3 Rue La Boetie, Paris 8. As a service to French industry, says *Packaging News* (England), the French Institute of Packaging is now extending the activities of its machinery branch —established five years ago—by compiling a complete reference file of the packaging machinery and equipment produced in various parts of the world. When completed, this reference file will be available to all industry.

ENGLAND

Low-cost, high-density polyethylene lids

Two confectionery firms in England have adopted jar lids of an unbreakable type, molded of high-density polyethylene, for standard screw-neck jars. According to *Packaging News* (England), the new jar lids are the same price as similar lids molded of paper or wood-filled urea plastic. At present only standard 4-in. caps are available, but other sizes, it is reported, may be in production later.

For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

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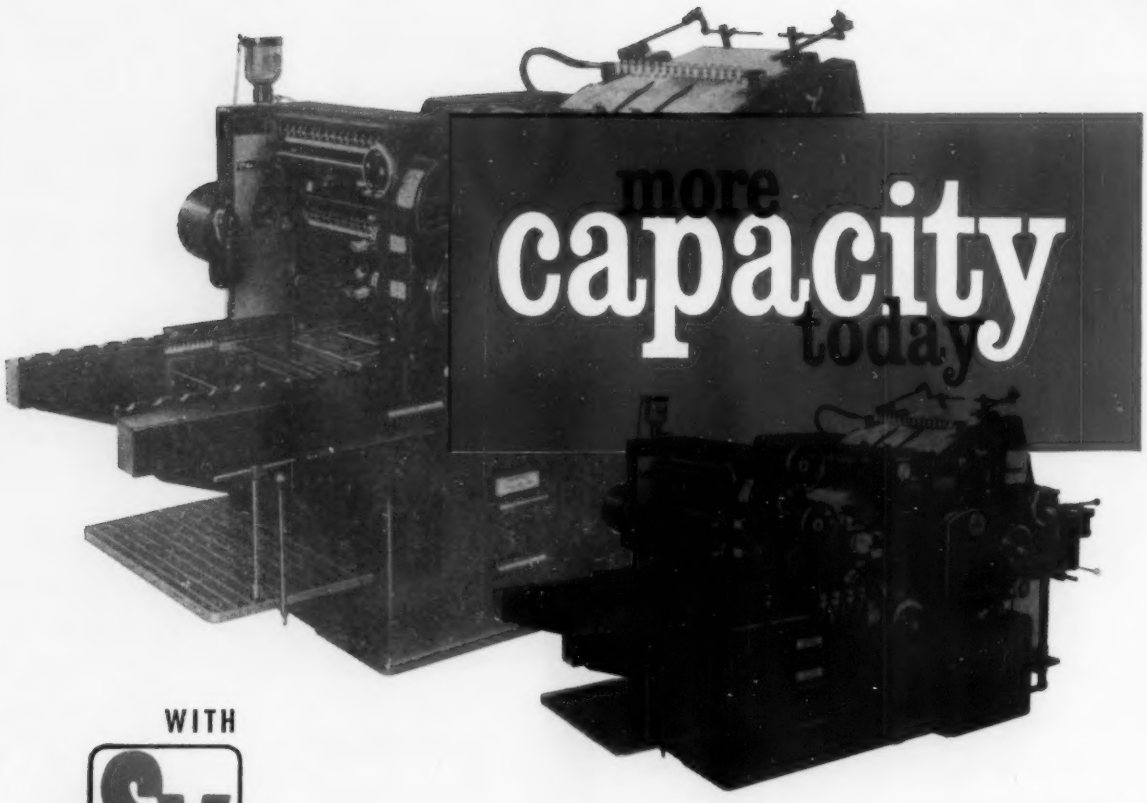

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This snubbing action means treated cartons have reduced tendency to slip and fall during sudden starts and stops in shipment and in-plant handling. There's less costly breakage damage, less time-consuming restacking and repackaging, less danger to personnel. And containers treated with "Ludox" resist soiling, permit sharper printing. Result: increased customer appeal.

Coatings of "Ludox" can be applied economically by either paper manufacturer or converter. We'll be glad to send you names of suppliers plus details of the Du Pont testing procedure for "Ludox" mentioned above. Just write the Du Pont Company, Industrial & Biochemicals Dept., Room 2533-N, Wilmington 98, Delaware.

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hi-fax® provides packaging with a luxury look

Now new Pink Lotion Lux Liquid has a container as modern as the liquid detergent it contains.

Changing a packaging design is a major operation at Lever House and this latest innovation—the conversion to a plastic bottle—was made only after marketing and packaging experts had tested dozens of containers and then subjected them to extensive consumer reaction as well. The outcome was the "Doric" model based on Hercules Hi-fax high-density polyethylene.

Why Hi-fax?—Consumer and dealer reactions to the new container included these advantages: no denting or breaking, no rusting, better gripping, no leaking, no danger of chipping porcelain or tile.

Hi-fax offers many other advantages aside from those of direct interest to the consumer. It is economically competitive with metal, lightweight, offers molded-in color possibilities and can be molded to almost any shape.

If you design, package or sell, you'll want to know more about the properties and advantages of Hi-fax. Write to Hercules for further technical data.

Lux Liquid containers are molded by Owens-Illinois Glass Co. and Plax Corporation.

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Editorial Memo

The uncommon European market

The world has long looked to America for leadership in packaging. Will this continue in the new decade?

Up to now, the new world and the old have been worlds apart in packaging considerations. The most populous of the Western European nations (West Germany) has only 52 million persons, as against the United States' 179 million, and none has anything like the climatic differences which we encounter in the far reaches from Alaska to Florida. This has meant (a) that we have been geared to a far higher rate and volume of production to cover our greater population and (b) that our product-protection requirements have been higher.

By 1970, these basic differences probably will have been wiped out. The European Common Market, already in being, will provide literally a common market for packaged goods in six countries (West Germany, Italy, France, Holland, Belgium and Luxemburg) with 166 million population—almost the equivalent of the U.S. The first steps have been taken under an agreed formula by which all tariffs, quotas and other barriers to free trade between these countries can be wiped out by 1970. These "inner six" countries may by then be joined by an "outer seven" (the United Kingdom, Sweden, Norway, Denmark, Switzerland, Austria and Portugal), with a combined population of 87½ million, which have lately formed a comparable European Free Trade Assn. A merger of the two unions is possible; a working agreement of some sort, inevitable.

Thus, we have in prospect a European community of 13 nations with more than 250 million population, stretching from the Arctic to the Mediterranean, with trade as free as we have among our 50 states.

This means that the Dutch packager of biscuits will be packaging for a market not of 11 million but 250 million; the French packager of soap will be shooting at 250 rather than 44 million consumers. Competition for the enormously expanded market will be a spur to better package design and function, climatic extremes will require greater protection and—for the first time—many European packagers will be able to use high-speed U.S. machinery capable of 300 or more packages a minute.

But we must remember that while tariff barriers among these European nations are crumbling, the tariff wall against American imports will remain intact and will grow steadily more forbidding.

This is a challenge not only to American manufacturers of machinery and materials; it is a challenge to every American packager who has, or hopes to have, a European market.

In the latter case, the answer is clear: Get inside the wall. Already, such farsighted American packagers as Shulton, Inc., and General Electric are establishing plants to manufacture and package their products within the European Common Market. Many more such moves are being planned. The opportunity to tap a new, growing, thriving market almost half again as populous as these United States should not be missed.

The Editors

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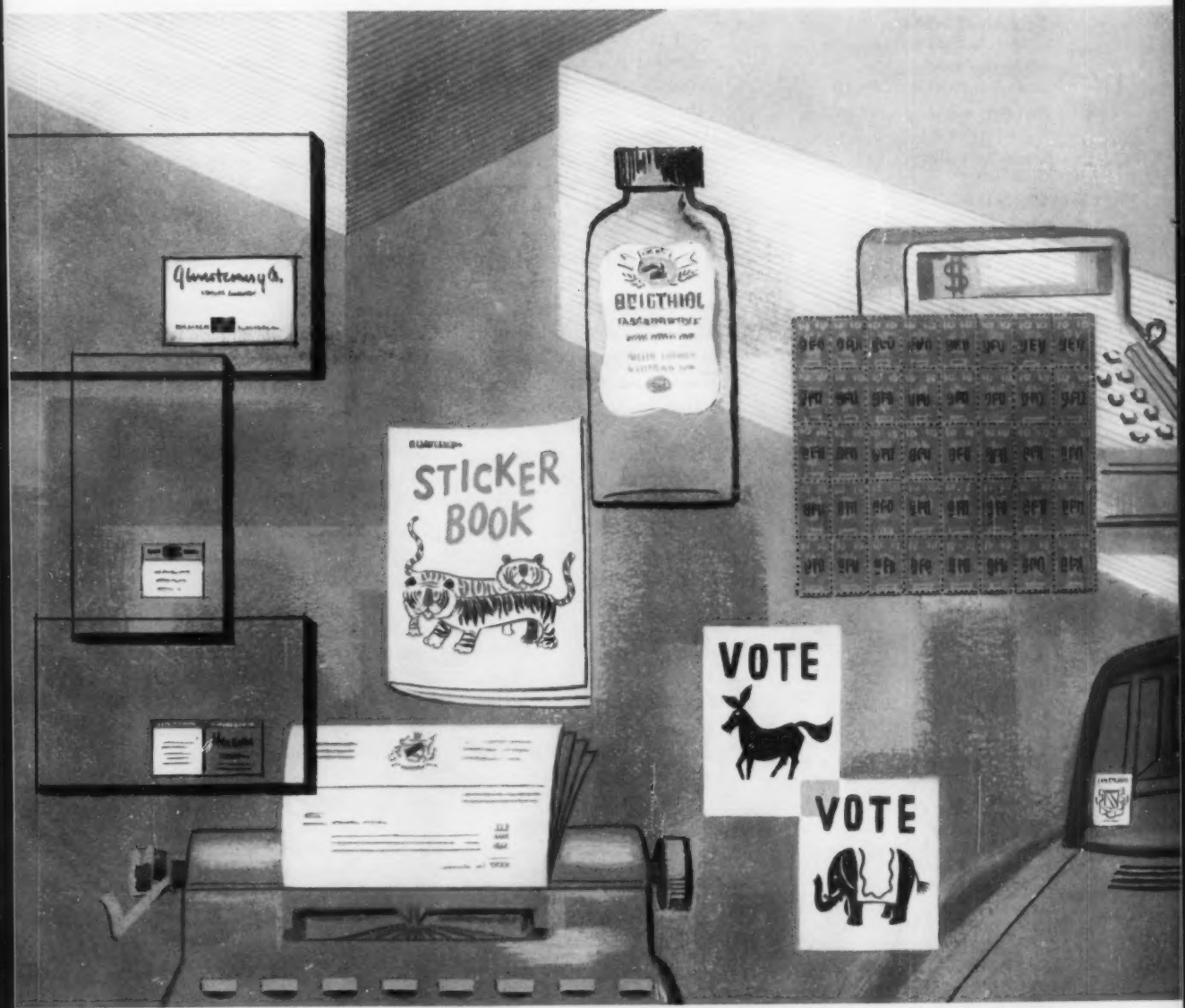

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MODERN PACKAGING
February 1960 Vol. 33 No. 6

GIFT PACKAGING: a critique

Is mechanized efficiency dragging us down to humdrum monotony?
The brightest ideas today are coming from abroad
and it's time that Americans re-evaluated this year-round sales tool

With so much emphasis being placed today on cost-cutting package standardization and mechanization, are packagers losing sight of the vast potentials of the really distinctive decorative gift package?

The question must be asked in the light of what appeared on the counters of the nation's retail stores during the past holiday season. For all its efficiency, gift packaging of American-made goods—like architecture, automobiles and soap cartons—has taken on a monotonous sameness. More often than not, the standouts, when you find them, carry labels showing that they came from abroad. One begins to ask, "What's happened to American creativeness?"

Unquestionably, we are handicapped by our increasing costs of packaging materials and labor, which together are pricing both the frills and the hand detail of distinctive gift packaging out of sight. It will be a sorry day when American packagers lack ingenuity to overcome such a situation.

Predictions are that consumer incomes will continue at an all-time high during 1960. This means that billions of dollars—more than ever before—will be available for non-essential spending. It is estimated that 40% of the country's present near-$500-billion Gross National Product consists of non-essentials. This is definitely no time to sacrifice on

Efficient gift pre-packs *speed sales at Loft Candy Corp.'s retail stores, where transactions are completed in a wink when shoppers make selections from display samples. This year Loft adds an extensive line of toys and novelties—many of them imports—as adjuncts to candy. All are pre-packed in decorative folding boxes.*

FROM ITALY—LESSONS IN ELEGANCE

Standouts today are the exquisitely detailed packages for Perugina chocolates, notable for their distinctive wrappings of individual pieces and unusual box constructions (see text). Covers with full-color photographic illustrations of Italian scenes are suitable for wall hanging, equipped with wire hook on the back.

Foil-wrapped novelties include chocolate watch and chain, tiny shoes, Christmas-tree ornaments, dainty chocolate flower pot, hard candies wrapped to look like bunch of grapes.

Even take-home bags have individuality when multicolor printed with trademarked floral design and have plastic ribbon handles and printed scalloped edges.

the altar of efficiency all the original touches that can swing the shopper's gift-purchasing decisions to *your* products instead of to your competitors'.

And, of course, as we have frequently pointed out in these pages, gift packaging today is limited neither by the product category nor by the calendar. It has shown that it will sell can openers and tack hammers as readily as candy and cosmetics, and that it will sell them for gift occasions in every month of the year—not merely at Christmas. So the gift market is an every-day consideration that cuts across the entire packaging field.

In gift packaging, it must be remembered, always, that success depends on two major appeals—quality impression and novelty. Opinions may differ as to what makes a good impression, but the fact remains

that shoppers want packaging which to them expresses quality for the gift they are selecting. And they never stop looking for the unusual, the cute, the humorous, or the just pretty.

With these thoughts in mind, MODERN PACKAGING during December toured New York's leading department stores and specialty shops in search of standout ideas. We were not looking for trends. There has been enough "me-too" thinking. What was wanted were really original concepts to spark new thoughts in areas which may be far remote from the specific examples selected for description here.

Italiano

Worthy of more than passing note is the imaginative packaging being done for Buitoni-Perugina, Inc., importers of Perugina Italian confectionery. This packaging may be seen in the firm's elegant little retail shop on New York's Lexington Ave. at 55th St., where the entire interior decor, right down to handsome hand-crafted enamel-on-copper doorknobs, was designed, produced and shipped from Italy. Possibly the only American confectioner which can approach these refinements in packaging is Blum's of San Francisco.

Does this kind of luxury packaging pay? Ask Fara Stella, Buitoni-Perugina's vice president. In two years, she reports, sales have almost tripled.

Nearly every item in this line—all packaged, of course, in Italy—reveals original thinking. There are tiny, decorative, cube-shaped cartons holding just one molded-chocolate animal selling for 10 cents. There are huge 12-lb. flat boxes with covers which are glass-framed limited-edition prints ready for wall hanging, selling for up to $65. There is a Capo di Monte ceramic chest which is filled with chocolates selling for $125.

The visitor is especially intrigued with Perugina's ingeniously executed novelties—a "gold" watch and chain for 25 cents (foil-covered molded chocolate, completely machine made), tiny foil-covered chocolate flower pots, colorful foil-covered chocolate Christmas-tree ornaments, foil-covered miniature chocolate shoes, hard candies wrapped to resemble bunches of grapes. For Easter, there will be huge foil-covered chocolate eggs in beautiful china vases simulating the appearance of an egg in a giant egg cup, as well as assortments in distinctive baskets and other novelty containers.

All Perugina's boxed chocolates are worth careful examination, too, for the unusual detail of box constructions and arrangements of delicately colored, aluminum-foil-wrapped individual pieces, some representing strawberries, lemons and nuts; others encircled with elaborately printed and embossed bands decorated with heraldic or pictorial motifs.

Many of the boxes (about $3.50 for a half pound; around $6 for a pound) appear to be a combination of rigid and folding construction. Extension-edge, frame-view base units are made of gold-colored, foil-laminated paperboard, die-cut, scored and glued over a paperboard base stiffener with side walls inside reinforced with corrugated. Flat covers carry applied full-color, photographic reproductions of familiar Italian scenes (Bay of Naples, Venice Canals, Milan Cathedral, etc.) and a hook on the under side makes them ready for wall hanging. A trademarked, gold-printed, glassine-covered pad on the inside of the cover protects contents and the cover is held in place by a metallic ribbon and

Set-up box *that saves labor in handling more than offsets the slightly higher cost of container, even on $1 item, says Bourjois.*

Unusual *folding boxes are used by Bourjois to dramatize certain products, such as this double-side-opening box for "Evening in Paris" spray perfume.*

GLASS CAN BE IMAGINATIVE, TOO

Leaning Tower of Pisa is simulated by private-mold bottles for Polli pickles, artichoke hearts and anchovies from Milan. Courtesy Charles & Co.

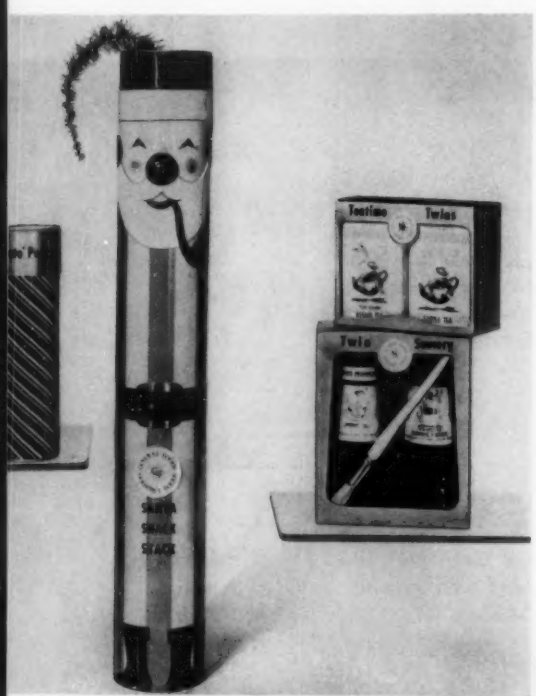
cellophane overwrap. An applied embossed brand label on the outside gives ingredient data.

Also notable are the charming take-home bags with plastic tape handles in which Perugina puts all purchases. All are made of bleached white stock, multicolor printed with a distinctive floral trademark design. Bags for small purchases are further distinguished by die-cut scalloped edges, green printed around the scallops—a decorative touch that can be added at very little extra packaging cost.

Fancy foods

At New York's famed fancy-food store, Charles & Co., Manager Ronald Kytan estimates that 90% of the gift items today are imports.

Here may be seen an impressive collection of beautifully lithographed and embossed metal containers and boxes for English and Dutch biscuits and cookies—luxury packaging of a type that has almost disappeared from domestic cookies. American manufacturers can also learn a great deal by observing the colorful and intriguingly arranged packaged assortments of imported cheese; eye-appealing, glass-packed snacks, hors-d'oeuvres and condiments, and the dozens of different kinds of baskets, hampers, trays, ice buckets, magazine racks, wooden buckets, teapots and salad bowls that Charles & Co. has purchased from all parts of the world to use as containers for its own packaging of food gift assortments. These special put-ups range in price from a few dollars to $125—this for a huge English, hammered-embossed brass chest filled with



Essential of novelty appeal *is indicated by 20 gift put-ups in General Foods Gourmet line. Simple window boxes hold sauces and teas. Cocktail snacks look festive in decorative fibre tubes. Most expensive item in line is a brass-handled, white-pine corner chest filled with Gourmet items selling at $25.*

sweets, snacks, preserves, condiments and toys. A novelty from abroad that catches attention is a glass container molded in the shape of the Leaning Tower of Pisa, which is used for Polli Italian pickles, artichoke hearts and anchovies.

To point out the unimaginativeness of American packages, Mr. Kytan contrasted the packaging of one quality brand of domestic jams and condiments with that of an English put-up. Labeling on the American jars was nothing more than printed identification and the outer package was drab, unprinted corrugated. Next to it, the English jams and marmalades carried colorful pictorial labels and the jars were housed in hinged-lid, set-up boxes covered with gay, gloss-coated red paper. "The quality of this American product is impeccable," said Mr. Kytan, "but what shopper will be attracted to it when it is displayed next to the import if a salesperson is not on hand to convince her of the quality of the product in the drab package?"

Also in fancy-food outlets one may find ideas by looking at many new packages adopted by food wholesalers specializing in gift lines. One such firm, Reese Finer Foods, Inc., Chicago, noted for its unusual trays and baskets, last season employed such novelties as a specially made 12-in. Atlas globe that opens around the "equator" to hold cheeses and snacks; a metal Ferris wheel carrying six different cheeses in pots that can be used as planters; wooden boxes made like Japanese pagodas with five drawers and a self-contained music box to hold choice teas.

PHOTO: LACHMAN-NOVASEL-OWENS

Department-store box wraps *reveal two major design approaches—the topical pictorial and the stylized motif. At top (left) is Macy's New York redesign of New York scenes; (right) Penney's stripe and W. T. Grant's stylized town scene, suitable for any community. At bottom are Maison Blanche's interpretation for New Orleans and the Jordan Marsh wrap for Miami store.*

A paperboard box designed in the shape of a Japanese smoke house contained tins of smoked oysters, clams, octopus and salmon.

The essential of novelty packaging appeal, apparently, has been quickly recognized by General Foods for its Gourmet line. Introduced a few years ago with only one or two gift-boxed assortments, the GF line now includes 20 gift packages using everything from folding window boxes (for two bottles of cooking sauces or two packages of tea)

From $10 to $70 millions *in 10 years is sales increase credited by James B. Beam Distilling Co. to this kind of packaging. Beam's formula: insist on a striking container (not just a fancy bottle). Shown are Beam's coffee-server container (top center), the company's chinaware sportsmen-trophy containers and commemoratives: Alaska statehood, Hawaiian statehood, Oregon centennial and Colorado Gold Rush Frontier bottle.*

to cocktail serving trays, ice buckets, novelty fibre tubes dressed up like Santa Clauses and a brass-handled, white-pine corner chest filled with Gourmet items selling for $25. In one package, GF includes, as a gimmick, a Japanese hibachi, a miniature charcoal grill used to heat hors-d'oeuvres.

Liquors

To see a full array of decorative liquor packaging, one has only to visit New York's Sherry Wine & Spirits Co. on Madison Ave., where Jack Aaron and his brother, Sam Aaron, carry a full line, including not only offerings by domestic distillers and extensive novelty imports, but their own exclusively designed decorative containers for assortments—such as a handsome brass-bound wooden firkin adapted from English design; "Le Can Can," a metal hamper full-color lithographed with Toulouse Lautrec figures, and their popular metal drum cooler.

The 1959 stand-out in this shop was Pear Brandy, with a whole pear in the narrow-neck bottle—*grown* there on a Swiss mountainside orchard where 600 bottles were placed around pear buds in expectation that the pears would keep growing until they nearly filled the bottles. Some 218 survived *in the bottles* and arrived in New York during December, each pear enveloped in a clear pear brandy. Reportedly, the pears will be preserved there practically forever, if more pear brandy is added when original contents are consumed. This provides Sherry Wine & Spirits with an opportunity to promote the sale of two bottles of the brandy—one with the pear inside, one without, for $24.90.

How packaging can help a small company to lead the giants in the gift market is told by James B. Beam Distilling Co., which credits its special packaging as one of the major factors in boosting its sales from $10 million to $70 million in 10 years. Beam's formula: to insist on a strikingly unusual container each year (not just a fancy bottle) and to follow through with help to suppliers to work out technical and economic problems. Beam has been doing this year after year with such containers as its familiar bowling-pin bottles, its cocktail-shaker

Champagne chill pack *by Paul Masson Vineyards cools champagne without ice bucket or refrigerator, a boon for Bon Voyage gifts sent to ships with champagne at just the right temperature. Bottle is wrapped in polyethylene bag. Six or eight ice cubes inserted in bag reportedly chill contents in 30 to 60 minutes. Slotted gift carton allows for bulge when ice cubes are inserted.*

Cute little things *always win favor. Among cosmetic novelties of the past Christmas season was this be-sequined figure appropriately accompanying Helena Rubinstein's Coquette Parfumette.*

bottle with two-part pouring spout and its Pyrex coffee-server bottle which was promoted along with collapsible coffee warmers in 1955.

Beam claims it has attained industry leadership with novel packages not only for the high end of the holiday gift market, but for special occasions when a commemorative motif has merchandising appeal. Two weeks after Congress voted to admit Alaska to the Union, Beam came out with an Alaska statehood bottle. Although intended for sale in Alaska only, major orders came from many other states. Encouraged by this success, Beam introduced a shoulder-strap Frontier canteen to commemorate Colorado's "Rush to the Rockies" and special containers to commemorate Oregon's centennial and Hawaii's statehood. All have reportedly been merchandising successes, as have chinaware trophy containers for sportsmen—a sculptured fighting marlin, a mallard duck and a hunting dog.

Unusual packages could be described indefinitely, but those mentioned are enough, we believe, to show that there is no end to original ideas for gift packaging if they are seriously sought for.

Cosmetics and toiletries

And they are urgently needed in the cosmetics and toiletries field, where packaging is generally beautiful but, with a few exceptions, last year showed little of the originality that has previously distinguished cosmetic gift presentations.

Popularity of the push-button, pressure-spray package continues to be a challenge to provide greater aesthetic appeal. Coty has done this at considerable cost with its shatterproof polypropylene case for a glass bottle. Chanel uses handsome black-and-gold-colored anodized aluminum cases over glass bottles for its metered cologne spray and over the stainless-steel containers that are used for its tiny metered-valve perfume spray.

The Prince Matchabelli design staff, headed by Rodolfo Urias, has found a way to beautify the glass aerosol at a considerable saving in cost by spraying a ceramic coating in color on the bottle before the protective coating is applied. This hides the necessary head space for aerosol function. The protective, transparent-vinyl coating is applied after being tinted and flecked with glistening aluminum flitter. The effect is very decorative and leaves the lower portion of the bottle partially clear to give full view of the color of the liquid contents. A whole line of Prince Matchabelli cologne sprays will be presented in containers decorated in this manner for spring merchandising promotions.

Elsie Miller, packaging director at Bourjois, responsible for the packaging of the ever-popular leading line of "Evening in Paris," says her company is actually saving money by going back to a set-up box on a $1 volume item, plus upgrading appearance. Bourjois finds that reduced labor costs for handling set-up boxes more than offset the slight extra cost of the boxes. Folding boxes are used in this extensive line only when they are wanted for unusual construction, such as is used this year to dramatize a purse aerosol. Bourjois is also offsetting high costs [*Continued on page 176*]

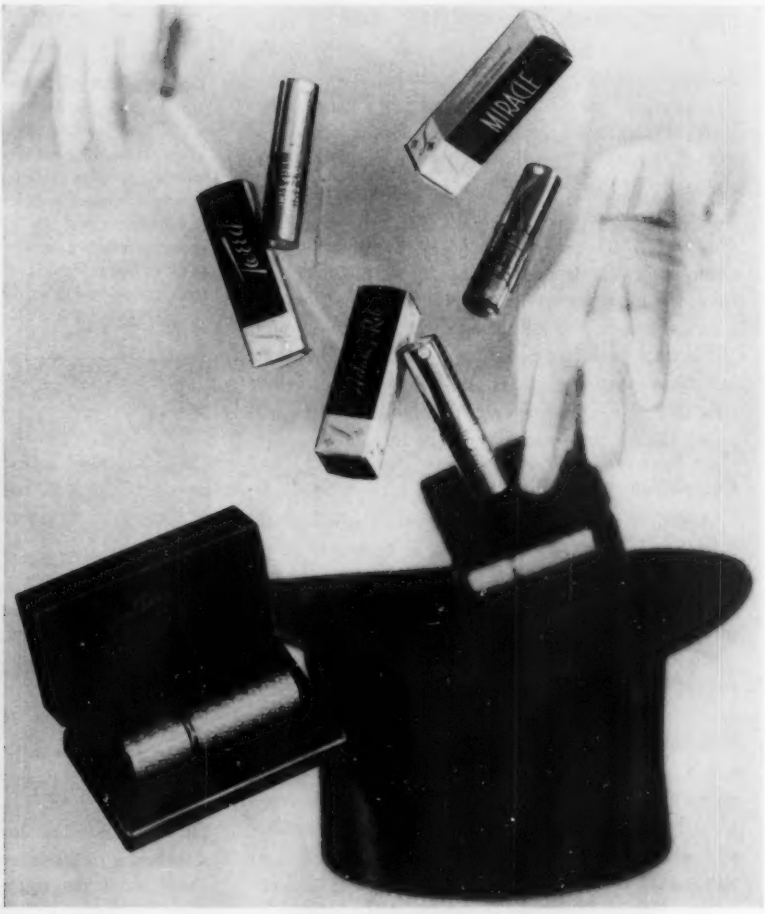
PHOTO, CHICAGO PRINTED STRING CO.

Convenient gift-wrapping aids *available today are illustrated by these carefully planned supplies which London Records, Inc., offers to its dealers. They consist of a ream roll of paper, sized to album width, a spool of ribbon and a roll of pressure-sensitive tape, all mounted on paper cutter. Stretchable ribbon loops and pre-made star bows with pressure-sensitive backing are also included for use during peak selling periods. Gift-wrapping service ties in with company's advertising promoting records as gifts.*

Glistening aluminum flitter *added to tinted, transparent vinyl protective coating—applied over base spray coat of colored ceramic to hide necessary head space for aerosol function—beautifies bottles for Prince Matchabelli cologne spray at considerable cost saving, company says. Spring colognes will be presented in this manner.*

The bantam aerosol

Metered-valve aerosol *for Chanel No. 5 (upper left) provides 225 measured sprays. Stainless-steel container is encased in anodized aluminum. Purse-size aerosols are now included in almost every major fragrance line today. Refills of different fragrances click into handsome Lentheric case (right) with the flick of the finger.*



2-oz. containers *of aluminum for nine different products win enthusiastic acceptance for Rexall's Aerosol Travel Mates. Convenient-sized packages are presented in quick-selling counter display. Containers by Peerless Tube; valve by Precision Valve.*

Increasingly, good things are coming in small packages, as many industries discover the advantages of push-button containers small enough to carry in pocket or purse

Application of medicinals *is one efficient function of the aerosol requiring small-sized units almost exclusively. Obtundia First Aid Aerosol Spray in 3½-oz.-content glass aerosol is recommended as combination antiseptic, germicide, surface anesthetic, surgical dressing and fugicide, all in one. Container by Wheaton Glass; valve by Precision Valve.*

Toy potential *is suggested by Multiple Product Corp.'s Play Spray glamour-aid set. The carton contains four midget aerosols filled with bubble bath, beauty cream, cologne foam and hair spray for little girls. Nitrogen and liquid gas propellants used are harmless.*

Latest aerosol production figures reveal a surprising trend. Whereas sales of aerosols of 12-oz. size (the standard can package) or larger have increased only about seven-fold since 1951, those of 6-oz. size or less have increased nearly 20 times. The small sizes, according to the Chemical Specialties Mfrs. Assn. figures, now actually account for 47% of the total 341 million non-food aerosols that were produced during the last year.

This growth of the bantam aerosol is significant for reasons that should be noted not only by aerosol users, but by all packagers.

- Since the smaller the aerosol the higher the package cost per ounce of product, it is apparent that consumers are willing to pay a premium price for the added convenience the small size offers.
- The cost of a small aerosol package may, however, be inconsequential in relation to the cost of a high-priced medicine or perfume fragrance which the consumer wants to buy in small quantities.
- The aerosol principle makes a small quantity go a long way. New metered valves, controlling the spray to just the right amount for one application without waste, are providing aerosols as small as 1 oz. that will furnish as many as 400 to 500 applications of cologne fragrances.
- New container materials—coated glass, nylon, seamless aluminum cans, as well as decorative outer casings of metal, polypropylene and other plastics—offer variety and distinction in aerosol design.

A logical physical principle operating in behalf of small-sized aerosols is that they require less wall thickness to provide the strength for holding adequate dispensing pressure. Says Dr. Lyle Goodhue, inventor of the principle of the aerosol package, "The only limitation in the use of the aerosol is the container. Most of the containers will have to remain small because basically, the larger the container, the greater the thickness or strength required of the unit."

Nevertheless, certain fixed costs, such as the valve, the cap and the labor and handling, remain about the same for 6- or 12-oz. sizes and this container cost per ounce of content becomes proportionately larger as size decreases.

A rundown of some of the areas where the small

New nylon aerosol *for Millot's Crepe de Chine Poudre Glacée is expensive, but elegant for a prestige product. Three-ounce unbreakable container fits easily into a handbag or overnight case. Container by Apcon, using Du Pont "Zytel" nylon.*

PHOTO BISDON MFG. CO.

Decorative outer case *of metal shields the inner glass aerosol that can be replaced when this cologne dispenser is empty. New metered valves provide hundreds of applications without waste.*

sizes seem to be making headway, and the various reasons why, may be helpful.

Perfume and cologne fragrances. There is scarcely a leading perfume house today which is not offering aerosol sprays either in the very small purse sizes or in 2- or 3-oz. dressing-table sizes. With such expensive products, economy is associated in the consumer's mind with small size and the convenience of an aerosol that fits the hand and the purse is an important factor. Reportedly, one-third of the sales of Avon Products, largest marketer of toiletries and cosmetics in the country, today are products in aerosol containers and a substantial percentage of these now are small sizes.

Travel use. Consumers like small sizes for travel, particularly in this air-minded age when weight must be considered. A successful marketing approach catering to this use is Rexall Drug Co.'s new coordinated line of aerosol Travel Mates—deodorant, toothpaste, shave cream, hair spray, suntan lotion, suntan cream, burn spray, insect repellent and a foot remedy—each packaged in a 2-oz.-content, lightweight, seamless aluminum aerosol. For the vacation season, Rexall promoted all of these in a counter merchandiser at 59 cents each—with 10% off on the purchase of any three or more.

Advantages are many, according to Rexall. The light weight of aluminum means a saving in shipping cost. Seamless construction obviates leakage and makes it possible to decorate more attractively because there is no seam or weld line. No problems were experienced in applying the valve to the container, although Rexall points out that these aerosols were produced in relatively small quantities on a slower-speed, semi-automatic filling line.

Medicinals. The midget aerosol is offering unusual convenience in the application of nasal sprays (which need to be carried in pocket or purse) and remedies where single-shot use is often all that's wanted. It is also winning acceptance in the ethical drug field for such products as cortisone spray, heart stimulants and others, where again the remedy must be carried by the patient.

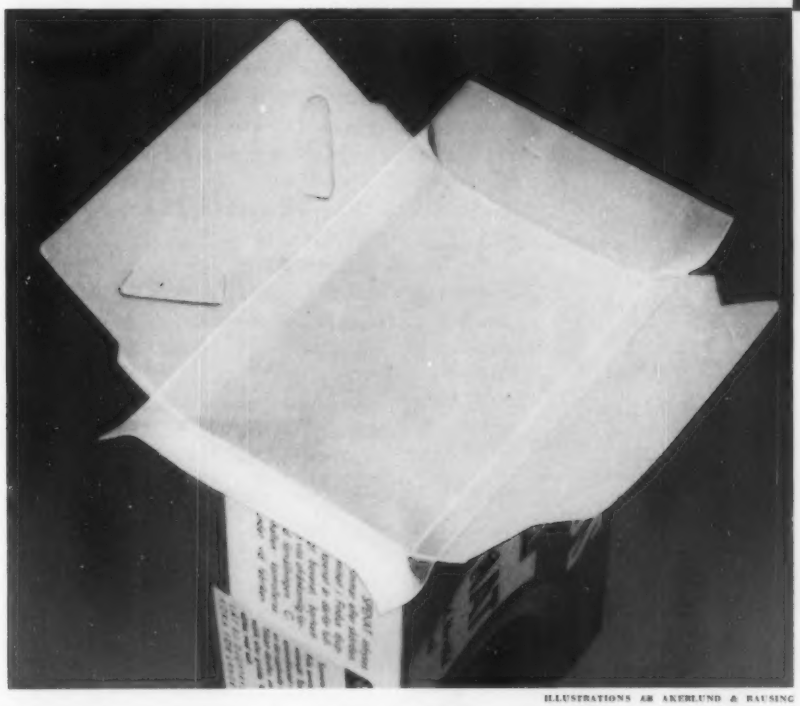
Sampling. Tiny aerosols as small as ½ oz. are being produced and one pharmaceutical firm already has used such a midget very effectively as a sample for distribution to doctors. It is an attention getter for introduction to the full-sized sales package.

Toys. The novelty appeal of the aerosol has even brought small-sized containers into the toy field. Multiple Products Corp.'s new Play Spray is a set of four 2-oz. aerosols holding a nitrogen-propelled bubble bath, a nitrogen-propelled beauty cream, a cologne foam and a hair spray. The four, sold together in an attractive gift package, retail for about $3, making it possible [*Continued on page 190*]

Sweden's leakproof carton

Thermoplastically sealed with an end paper that plugs flap gaps, it successfully holds both wet and dry products without liner or wrap and is used by the millions for Findus foods

Wrapperless carton *is externally a typical folding box with lock-end tabs. Findus packs for many European markets, hence copy language varies.*



ILLUSTRATIONS AB AKERLUND & RAUSING

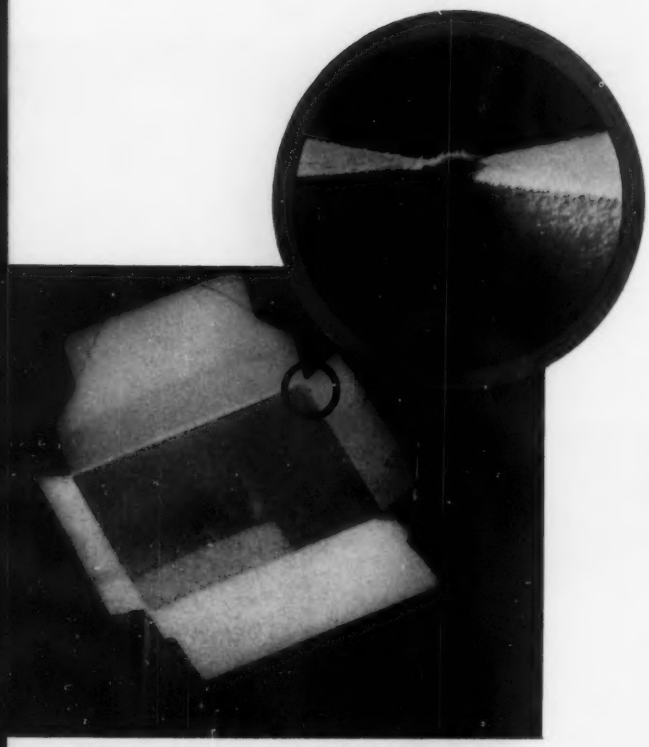
Coated paper *heat sealed across each end of the Findus carton hermetically closes the container before end flaps are folded.*

The wrapperless, linerless, heat-sealed carton is a relatively recent idea in the United States.* But the principle is familiar in Europe, where the Swedish firm of AB Findus, Scandinavia's leading frozen-food packer, markets more than 50 products in a patented carton which achieves a liquid-tight seal in a unique manner. Findus used 50 million of the packages last year.

Externally, the Findus carton looks like a normal folding box with lock-end flaps. But when the flaps are opened and folded outward, it may be seen that inside, heat sealed across each end of the container and extending onto the four flaps, is a rectangular sheet of thermoplastic-coated paper that provides a siftproof and liquid-tight seal. Depending on the product, the cartonboard and end-seal paper are coated or laminated with wax, polyethylene or some other thermoplastic, or the board may be laminated with aluminum foil or other barrier material to suit the particular product's requirements.

A tiny detail of package construction provides the secret of the tight seal. When cartons are mechanically set up and flaps at either end are folded outward prior to filling and sealing, a small fibrous tuft is formed in each corner by the "tearing"

*See "Wrapless, Linerless Cartons," MODERN PACKAGING, Aug., 1957, p. 92; "Tear-Strip Carton for Frozen Food," MODERN PACKAGING, March, 1958, p. 168, and "New Cold-Glued Wrapperless Carton," MODERN PACKAGING, Oct., 1959, p. 124.



Fibrous tuft *formed when adjacent flaps are folded back plugs up each corner as cover paper is heat sealed.*

action caused by bending apart the adjacent flaps. In heat sealing the coated paper to open ends of the carton body, this tuft is tightly adhered to the paper in a fibre-to-fibre seal, thus plugging up the corners. A feature of the Swedish design is an edge waxing of the glue-flap edge, accomplished during carton manufacture, which reportedly eliminates all wicking through the edge.

The same package, as used by Petter, an Austrian frozen-food packer, was adjudged one of the 29 best European packages in the Eurostars competition held recently in London.†

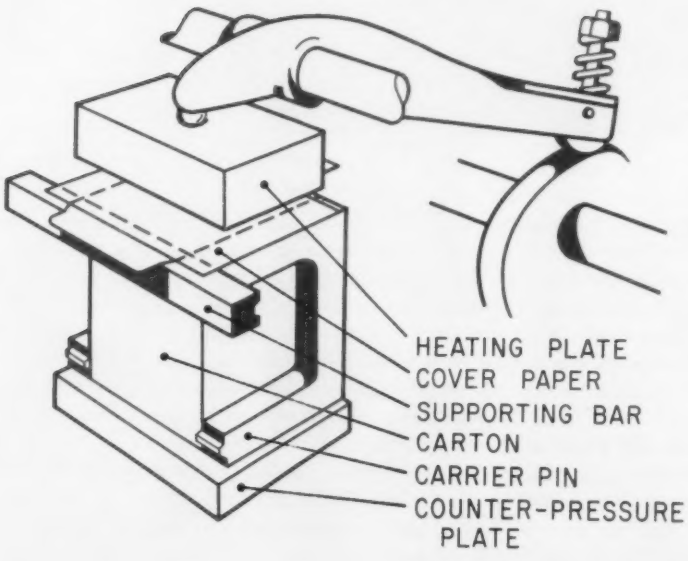
Siftproof, the container is especially suitable for packaging a variety of dry products. A small corner slit in one end paper permits pouring of dry products and reclosure, if desired.

Packages are set up, filled or sealed, in Sweden, on special semi-automatic or automatic equipment at speeds ranging from 1,000 to 3,600 units per hour, depending on product and desired output. Findus employs both types of machinery and both manual and automatic filling. The method of filling is selected to suit the product being packaged.

An American licensee is developing higher-speed, continuous-motion equipment to handle the same basic type of package. Machinery is expected to handle three speed ranges: 60-90, 150-200 and 300-400 cartons per minute.

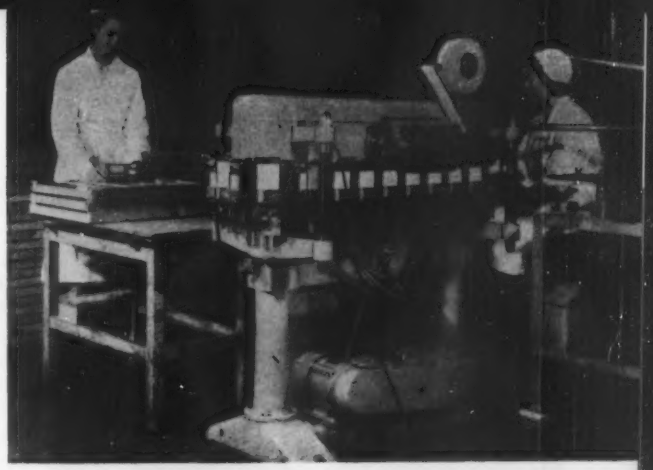
In Sweden, printed cartons are delivered flat to the Findus plant and loaded either by hand or automatically from magazines. In Sweden, all cartons have

†See "Europe Shows its Finest," MODERN PACKAGING, Nov. 1959, p. 166.



Heat sealing *is accomplished with carton flaps held by a fixed collar to provide a rigid, flat surface as heating plate presses against cover paper and flaps.*

Semi-automatic or automatic units



Manually fed machine heat seals and locks flaps on one end in initial pass through unit. Then cartons are turned upside down by hand and fed through same process after filling.

Magazine-fed equipment, for large volume, runs carton blanks from right to left. They are set up, heat sealed and locked on the bottom, then filled (far left), heat sealed and finally locked on top (far side of machine).

the same end dimensions. Volume of the cartons is varied by changing carton length. Required machine adjustment to handle different sizes takes 10 minutes, according to Findus officials.

In the United States, carton dimensions will conform to U. S. standards.

The hermetic sealing of the end paper to the container body is an identical operation at either end of the carton. On the semi-automatic unit, the paper is applied and sealed at the top while the carton is supported from below by a counter-pressure plate. Then these cartons are turned upside down manually and run through the [*Continued on page 182*]

SUPPLIES AND SERVICES: "Expresso" packages and packaging equipment by AB Akerlund & Rausing, Lund, Sweden, licensed in the U. S. to Mead Packaging, Inc., Atlanta 2.

Opening *is started by tearing end flaps at one corner. Cover paper, which is sealed to the carton flaps, follows suit.*

Free shine invites purchase

Unquestionably, a self-selection display stand that invites shoppers to test the product goes a long way toward clinching the sale. An interesting example of such a sales-stimulating unit is the corrugated "shoe-shine stand" floor merchandiser now being used by Turtle Wax, Inc., for Penny Shoe Shine in aerosol cans.

The space-saving, vertical display contains 24 cans of spray-on shoe polish—six on each of four narrow, stepped shelves. Copy printed on the merchandiser and on a paperboard riser invites store customers to step up for a free shine. For the purpose, the unit's projecting foot-stand base holds another can of polish inside a die-cut opening. Instructional copy and an outline of a shoe print on the base further encourage action by shoppers.

Colors of the display—red, yellow and blue on white—match those of the container. Side-panel design features a giant-size reproduction of the spray can and a one-cent piece, along with the promotional message: "10-day shine in 10 seconds." A prominent price spot printed on the riser panel is designed to help promote impulse purchases. *Display by Stone Container, 4209 W. 42 Pl., Chicago 32.*

IDEAS

Lever chooses cylinder shape

After two years of testing with dozens of shapes, the cylindrical bottle with wrap-around paper label has won out as the final choice for national marketing of Lever Bros.' Lux Liquid in rigid polyethylene containers. Choices finally narrowed down to the two shapes illustrated here: the hour glass with spot label (right in photo), nicknamed the "Gibson Girl" by Lever, and the straight cylindrical bottle ridged above and below, called "Doric." Consumer preference favored the Doric shape because of easier gripping. Packaging experts favored it as offering better shelf visibility, readability and eye flow, Lever says.

From a merchandising standpoint, the winning design presents additional advantages, according to the company. The wrap-around paper label offers ample space for special promotional messages and can be easily removed by consumers for proof-of-purchase use in contests and during send-away premium offers. *Containers by Owens-Illinois Glass Co., Toledo 1, and Plax Corp., Hartford, using Hercules polyethylene. Container design by Utleys, 72-26 Loubet St., Forest Hills, N. Y. Paper labels by Strawberry Hill Press, 23-02 49 Ave., Long Island City 1.*

Final shape Test shape

Handy cup-and-tablet pack

A low-cost, single-use film package that is both a container for two aspirin tablets and a handy drinking cup as well has been adopted by Aspirin Plus Corp., Los Angeles. The compartmented convenience package, designed to be carried in pocket or purse, consists of a lamination of printed 300-gauge cellophane and 2-mil polyethylene. Heat sealing divides the package into its two components—an upper pouch holding the tablets and the drinking cup below. Notches on either side of the container permit easy detachment of the compartments. The aspirin pouch also is perforated at one corner to simplify tear opening. Forming, filling and sealing are done on automatic machinery.

The film package is attached to a printed hang card by a strip of pressure-sensitive cellophane tape. To promote impulse purchases, cards are merchandised from a wire counter rack on which is hung a colorful three-dimensional paperboard cut-out of the company's trade character, Mr. Aspirin Plus. *Film package formed, filled and sealed by The William Steven Co., 2522 San Fernando Rd., and printed by Standard Packaging's Modern Packages Div., 4500 E. Dunham St., both Los Angeles.*

IN ACTION

Heinz adopts 'the Italian look' for canned spaghetti

H. J. Heinz Co. breaks with a trend among food packagers by eliminating product vignettes on the redesigned paper labels for its line of canned spaghetti and macaroni dishes. In a bid for stronger shelf identity and increased sales, it adopts new labels to give greater prominence to the brand name and to product-identification copy.

The company's own product-development department designed the new label look. Its debut is timed to coincide with the introduction of three new canned-spaghetti products.

Basic colors on the restyled labels are red, white and green. Traditionally associated with Italy, the "home" of spaghetti products, this color combination is calculated to convey a suggestion of high quality and taste appeal. Label copy is printed in bold black lettering.

The familiar Heinz keystone trademark is retained as the dot over the letter "i" in the brand name and as the chief element in a centrally positioned, gold-colored crest device. In the former line of labels, the Heinz name appeared inside the trademark, which partially overlapped a dominant color illustration of the food product in a serving dish. *Paper labels by The Nevins Co., Clifton, N.J.*

Progress of a private brand

Label redesign that involves 600 packages, yet holds the line on costs, is First National Stores' bid to build new appeal for its products in the retail battle with national brands

Packaging committee, *composed of executives of First National Stores and its label supplier-designer, meets once a month to make label decisions. Members are (left to right): Kenneth Hess, director of grocery purchases, First National; John W. MacNeil, buyer, First National; Holt Monaghan, sales manager, Muirson Label Co.; Joseph Williams, Boston representative, Muirson; William Longyear, package-design director, Muirson, and George Fichtner, Muirson vice president. Not shown is John L. MacNeil, First National's vice president in charge of the redesign program.*

Early in the Fall, shoppers at First National Stores got their first look at a brilliant new family of full-color labels developed for this major Eastern supermarket chain's private-brand products. Some 60 canned staples introduced the redesigned labels, which eventually will appear on all of the company's more than 600 retail packages.

First National's sweeping redesign program, which has been achieved with significant production economies, is calculated to unite a confusing variety of packages, products and brand names into a single, quickly identifiable family, as well as to project appetite appeal and an image of high quality. It is proof of the growing realization by supermarket chains that top-notch package design is the best—often the only—means by which their private brands can compete successfully with heavily advertised national brands at point of purchase. With little or no widespread pre-selling behind it, the private label depends for survival on the impression it makes during the few critical seconds in which the shopper makes a decision.*

From headquarters in Somerville, Mass., First National (15,000 employees) operates 540 supermarkets and retail shops in New England, New Jersey and eastern New York. Created in 1925 from a merger of three grocery chains (a meat and fish distributor was added in 1926), First National is the biggest supermarket chain in its marketing area and one of the biggest in the U.S. Sales for the fiscal year 1959 totaled $532 million, an increase of about 900% from the first year of operations.

*See "The Private-Brand Challenge," MODERN PACKAGING, March, 1958, p. 125.

COLOR PLATES COURTESY MUIRSON LABEL

Four brands *packed by First National are united into a memorable, appealing family by strong trademarks and appetizing product pictorials. Color coding helps identify among brand names. Scrolled "signboard" trademark harks back to roadside inns of Colonial New England and suggests historical connotations of good food and sound value.*

During the years of its growth, the company added many new products and brand names, without making any concerted effort to maintain family identity in package design. The result was a hodgepodge of labels that it was felt weakened brand-recognition values throughout the line. Meantime, competition from design-conscious, nationally advertised brands was increasing steadily.

At this point, First National's management decided on a complete package-redesign program having as its nucleus a strong central trademark that not only would stand out better among competitive packages, but would also achieve its goals of family identity and quality appeal. The plan was translated into action early in 1958. It is an evolutionary program that already has involved some 250 labels, with new ones appearing on store shelves as fast as they can be processed.

The first tangible step in First National's label-redesign program was the creation of a seven-man packaging committee. Consisting of three executives from First National and four from its label supplier-designer company, the committee meets regularly once a month to thresh out and agree on design problems. Out of one of the earliest of these meetings came the company's central trademark device—a modern rendition of a scrolled signboard which in Colonial New England designated a roadside inn. The symbol, which formerly appeared only on a few First National packages, was chosen as the full-line trademark because of its historical connotation of good food, hospitality and value.

Another basic decision made by the committee was to reduce the number of the chain's brand names to five. Finast, Yor Garden, Richmond and Cloverdale identify First National's four brands of canned goods, with the "bread-and-butter" Finast name also appearing on glass containers and cartons for a wide range of grocery-store products. The Brookside brand name is used for butter, ice cream and other dairy items.

On all packages, the brand name is printed inside the signboard trademark. Color coding helps identification among the various brands. Wherever possible, particularly on food packages, appetizing full-color vignettes are featured prominently on the new lithographed labels.

First National believes that the policy of regular monthly meetings with its supplier-designer team is an important factor in keeping production costs down, by eliminating false starts and arriving at basic agreements months in advance of new-label introduction. Costly last-minute rush jobs are avoided. At these meetings, mock-up labels are presented for discussion and ideas for other labels are tossed into the hopper.

Buyers often are called in for consultation on specific label problems. Experts in their individual product fields, they know from experience what makes a package sell. They can give valuable advice on what is or is not needed in surface design, label information and package size. Their opinions, combined with the results of company point-of-purchase studies conducted by the committee to determine the elements that make one package more attractive to consumers than another, help determine final label design.

At the actual label-production level, various

COLOR PLATES COURTESY MURRAY LABS.

Brilliant new line-up *of labels is characterized by frequent use of mouth-watering photographic vignettes in full color that give shoppers a conception of package contents. Labels on most cans have duplicate front and back panels to help insure brand impact on the shelf no matter which way the containers are turned during stocking.*

other factors come into play to help keep costs down. Before a label design is presented to First National for final approval, it goes to the supplier's technical department, where it is checked over to see that the best color effects are being achieved at the most economical cost.

Examples of how such thoughtful design planning can hold the line on costs are represented by the new packages for frozen dinners, frozen concentrates, ice cream, salad dressings and preserves. Before redesign, packages within each of these product lines had to be printed separately because of different color combinations. The use of standard colors in the redesign permits all packages within a given line to be combined in production.

The photographing of the product vignettes is in the hands of a man with 45 years' experience in color photography. His know-how in making accurate color transparencies for label reproduction reportedly keeps photography costs down by minimizing the need for re-shooting.

Efficient engraving and printing operations also play an important part in production economy. The flow of work is speeded up by releasing to the engraving department entire units of labels within a particular brand rather than releasing them piecemeal. This permits the ganging of many different labels for printing. Label sheets, incorporating an average of 50 labels each, are run off at a rate of 5,500 per hour. After printing, the labels are varnish coated at a temperature of 180 deg. F. to give them a glossy, scuff-resistant finish.

The labels for First National's Finast, Richmond and Cloverdale brands of canned goods have duplicate front and back panels. The company considers the "twin-panel" label an important weapon in the never-ending battle for shelf appeal with competitive brands. This design technique, the packager points out, virtually guarantees that major label data will always face front, no matter which way the can is turned during shelf stocking or after inspection by the shopper.

To give an additional aura of quality to the company's Yor Garden line of canned goods, the color vignette and signboard trademark are flanked by full-color photographic reproductions of the product in its natural state. This "festoon" effect is continued across the back panel. In creating the Yor Garden can design, the supplier's art department first made a "life-size" sketch of the label. Then the actual fruit or vegetable was placed over the mock-up in as nearly exact position as possible for final shooting of the photograph.

Although First National cannot compete with the full-scale advertising campaigns with which the big national packagers pre-sell their brands, it is backing up its new labels with a healthy program of regional promotion. In addition to local newspaper ads, the packager ran a full-page color ad featuring its redesign in a New England edition of the Oct. 31 issue of the *Saturday Evening Post*. A second ad appeared in the January *Post*.

It is too early for consumer reaction to First National's new label look to show up in the sales charts. But in this combination of a memorable trademark and colorful appetite illustrations that together spell high quality and good value, the company is confident it has a winner—no matter what the competition may present.

SUPPLIES AND SERVICES: Redesign program and label production by Muirson Label Co., Meriden Div., Meriden, Conn., under the supervision of its consultant, William Longyear, package-design director and professor of package design, Pratt Institute, Brooklyn.

Hodgepodge *of label designs, which splintered the First National image in many directions, was a basic weakness of former packages. Lack of a central trademark and lack of distinction in brand-name lettering contributed to the confusion.*

NOW: polystyrene film for produce

Low-cost plastic, brilliantly clear, heat seals on standard equipment to enclose Scafidi tomato boats in crisp, printed overwrap. Safeway uses solvent-seal film on identical machine

At Scafidi . . . *Sparkling overwrap of bioriented polystyrene film is now heat sealed without solvents over rigid polystyrene tomato trays. Neat two-point end seals and clean bottom seal are achieved despite difficulty of overwrapping thin-section plastic trays.*

Packagers searching for low-cost, sealable, sparkling-clear wrapping materials might well take a look at a newly improved candidate—bioriented polystyrene—which has now been put on automatic overwrapping machines at the Scafidi Tomato Co., Springfield, Mass., and at eight pre-packaging plants of Safeway Stores, Inc.

Whether heat sealed (for the first time) as at Scafidi, or solvent sealed as at Safeway, this thermoplastic film forms a crisp, glass-clear overwrap for tomatoes packaged in semi-rigid polystyrene or paperboard "boats" or trays. In both cases, speeds of the automatic operation are comparable with that for conventional cellophane overwrapping.

Film considerations

Bioriented polystyrene film has been used in packaging for a little more than a year,* but inability to seal the material on standard equipment has heretofore restricted its use to relatively small-scale glue-sealing applications. Film technicians are still puzzling over just what factors contribute to the new-found ease of heat sealing and investigation is continuing on this subject. The best opinion to date is that control of stress level and identical orientation in both the machine and the cross-machine direction are the keys to sealing success.

Whatever the eventual explanation, the fact that the material can now be easily handled is attested by Scafidi's overwrapping of injection-molded polystyrene tomato boats, which do not offer a firm support for end seals in the film and are notably harder to wrap than the conventional paperboard trays, which are also used by the Scafidi company for some of its other tomato packs.

Interest in polystyrene film has been generated primarily by its low price, which is reported to run 20% less than that of cellophane. Among all transparent films, only one or two grades of polyethylene in thicknesses of 1 mil or less are said to be less expensive. None exceeds polystyrene in clarity.

For produce, the material is said to offer these further advantages: high gas transmission and reasonably low water-vapor transmission, an ideal combination for fresh fruits and vegetables that continue

*See "Polystyrene Films in Use," MODERN PACKAGING, Sept., 1958, p. 122.

At Safeway . . . *Clarity of solvent-sealed film overwrap for paperboard trays permits all copy to appear on tray. Safeway and Scafidi use the same overwrapping equipment, with the exception of application of a solvent by Safeway.*

to respire even after packaging. These properties eliminate the necessity of perforating the film, which is commonly done with other transparent overwraps to prevent "ballooning" of the package from internal gas pressure. The crackling feel of polystyrene film, which is crisper than cellophane film, is also cited as an advantageous merchandising feature.

Scafidi's method

Scafidi uses a standard type of overwrapping unit modified only by dividing the control of side and bottom sealing plates between two thermostats. Sealing temperature for the polystyrene film at Scafidi is controlled between 275 and 300 deg. F.—a broad heat-sealing range for any thermoplastic film.

As in most produce operations, the tomatoes are hand loaded into the plastic trays, which are then conveyed directly into the overwrapper at a speed of 89 packages per minute.

Supplied in regular roll form, flexographically printed in bright green [*Continued on page 188*]

SUPPLIES AND SERVICES: Scafidi: Plax "Polyflex" bioriented polystyrene film printed by Diaphane Corp., 1934 Arch St., Philadelphia 3. Model FA overwrapper by Package Machinery Co., East Longmeadow, Mass. Injection-molded polystyrene trays by Gilbert Plastics, Kenilworth, N.J. Safeway: "Trycite" biaxially oriented polystyrene film by Dow Chemical, Midland, Mich. Butyl carbitol acetate solvent by Union Carbide Chemicals, 30 E. 42 St., New York 17. FA overwrappers by Package Machinery Co. Paperboard trays by Standard Folding Trays Corp., Jackson Heights 70, N.Y.

Packaging machine *at Scafidi, of same basic type as that used at Safeway, handles polystyrene film at same speed as cellophane. Straight-line operation starts with hand loading of boats (rear). Special heat controls govern sealing temperatures. Finished packages stream from machine (right) at 85 per minute.*

...tory for

Packaging line, *built by Ethicon, incorporates a filling table with automatic lid feed and heat sealer (center and right) to assemble the suture packets. Pre-formed in groups, the packets are sealed on three sides, the fourth side remaining open for subsequent addition of the preservative fluid.*

Formed foil pouch provides tear-open convenience

radiation sterilization

Ethicon's highly mechanized system for packeted surgical sutures, using a TV-monitored underground bombardment room, points the way to wider use of this technique in drug packaging

Such atomic-age terms as klystrons, thyratrons and ionizing radiation may become common to the language of packaging as a result of a new radiation sterilization facility for volume processing of surgical sutures developed at Ethicon, Inc., Somerville, N. J., a Johnson & Johnson company.

These electronic elements, which produce penetrating but invisible "bullets" that destroy microorganisms inside a hermetically sealed package without the application of heat, have been combined with high-speed foil pouch-packaging techniques to produce a unique container for pharmaceutical products that recently won for this company the Packaging Institute's 1959 Corporate Award.

Aside from its perfection of a sterile product in a sterile container using new packaging methods, Ethicon's broad contribution to packaging advancement lies in its volume production of this item at speeds that meet today's demand for mass output. Although production figures cannot be disclosed, it may be said that this operation, in both volume and mechanization, goes well beyond anything previously seen in radiation sterilization for pharmaceuticals.

Ethicon, of necessity, built all the packaging equipment used in the operation, since none was available that could perform the precise function.

Ethicon's new package is a relatively small item: 3½ in. long, 1⅜ in. wide and ⅛ in. deep. Comprising a laminated plastic and foil packet, the package represents more than seven years' development work and culminates a 12-year drive by Ethicon to incorporate maximal convenience and product protection for surgeons and nurses in a versatile package for more than 500 suture products of gut, silk, wire and other non-absorbable materials.

The result is a liquid-tight and gastight packet sterilized on the inside by radiation and packed in quantities in glass jars containing a sporicidal solution of formaldehyde and alcohol that sterilizes the outside of the packet—rendering it instantly ready for use in the sterile operating area. (The bottled solution permits resterilization of packets removed in the operating room, but unopened.)

To open, the package is lifted out of the solution and simply torn apart by hand at the position indicated by a notch, without the usual use of scissors. The exposed, coiled suture-and-needle combination is grasped to remove it from the pack.

Credit goes to the supplier of the roll-stock laminated material, who worked with Ethicon on the problem for more than six years. The problems which had to be overcome in constructing a package for such a product were formidable:

1. The packet must be tightly sealed to avoid

To open, attendant grasps both ends

Tear is made along dotted line

Sterile, coiled surgical suture is ready for use

entrance of the formaldehyde solution, which would ruin the product, and to prevent escape of the alcohol solution enclosed in some packets to keep gut sutures supple. Likewise, gas permeability of the packaging material must approach zero. The package must also withstand every type of climatic condition for an indefinite shelf life that may very well run beyond a period of 10 years.

2. The packaging material must be impervious to chemical action of both formaldehyde and alcohol, and must resist any physical or chemical changes induced by electron bombardment. The packet must also tolerate the many germicides and detergents commonly used in hospitals.

3. Paper bonded to the flat side of the packet must not soften or release particles into the clear, sterilizing jar fluid; yet the paper must accept printing for essential labeling.

4. Clear printing of product information on the packet is essential, yet the inks must be impervious to the sterilizing solution and not smear or bleed.

5. To insure external sterilization, the packet, whether fluidless or alcohol filled, must sink in the preservative solution.

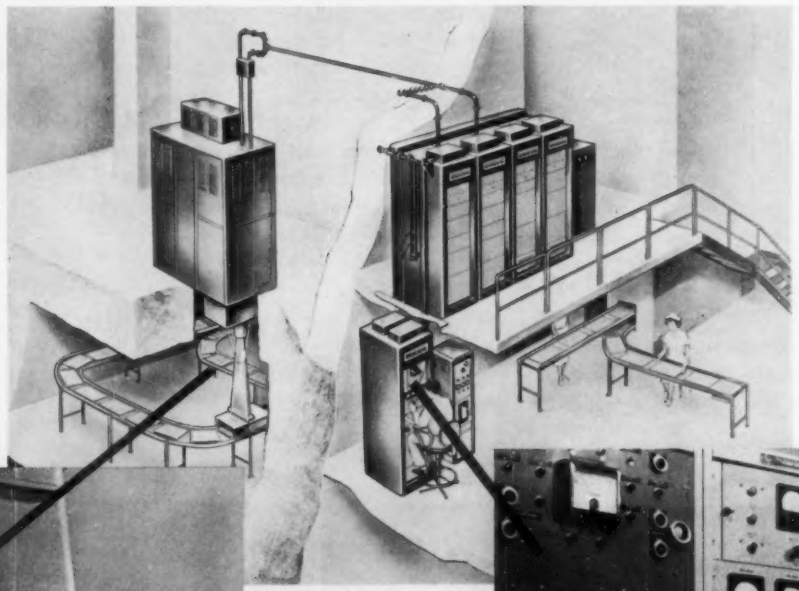
Tubular glass ampoules, with score lines for opening, are the traditional approach to these stringent packaging requirements. But glass tubes do not always break on the score line and, when opened, they present a fragment problem in the operating area and later in the hospital laundry. One recent approach to this problem was a pouch pack made from a fluorocarbon film.*

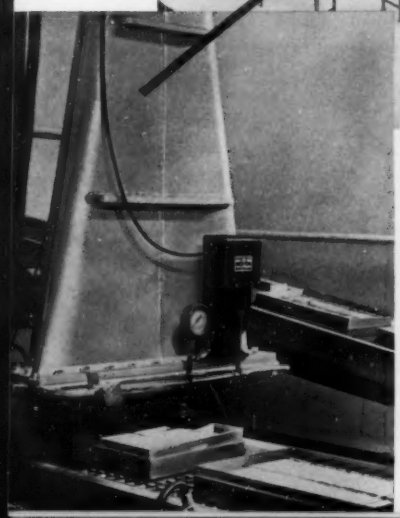
The new packet is a sandwich of two different laminated materials, both based on aluminum foil. The bottom of the package is formed from a sheet of aluminum foil laminated to a film of polyvinyl chloride. The top sheet is another special lamination of foil and PVC, with an outer lamination of a special paper, selected for its anti-scuff properties and compatibility with alcohol-resistant inks.

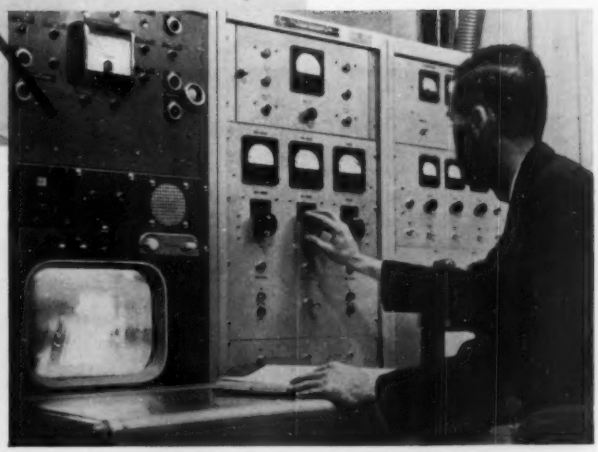
*See "Enter Fluorocarbon Film," MODERN PACKAGING, Nov., 1957, p. 158.

STERILIZATION IS MONITORED BY CLOSED-CIRCUIT TV

SKETCH, HIGH VOLTAGE ENGINEERING







Outside *heavily shielded target room (sketch), the operator watches a TV monitor (right photo) as the tray loads of packages parade under 7,000,000-electron-volt beam (left photo). Exposed for only a fraction of a second, the racked packets are riddled with invisible speeding electrons that destroy all microorganisms in package.*

Prior to the packaging operation, surgical needles are attached to the ends of the sutures, which vary in length from 12 to 60 inches. After winding into loops, the sutures are slipped into PVC-coated glassine sleeves and are ready for final packaging on one of the company-built lines.

Each assembly-packaging machine is fed with a roll of laminated aluminum foil. At the first station, multiple cavities are formed, cut and automatically transported to an index table. Here, the previously wound sutures, in glassine sleeves, are inserted into the cavities. At the next station, the tops are placed in position and are subsequently sealed on three sides by heat and pressure. The packets are transferred to a conveyor which transports them to a fill-and-seal unit. Here, the packets are filled with preservative fluid and sealed by a hot bar. The final station is a die-cutting operation forming individual packets from the previously described multiples.

All finished packets travel over individual lanes in a multi-channel conveyor to an inspection station, where visual and statistical quality-control procedures insure that only perfect packages are shipped. Collected in plastic tubs, the packets are moved on roller floor conveyors to a loading station, where they are stacked into trays for the sterilization procedure in the electron-beam units.

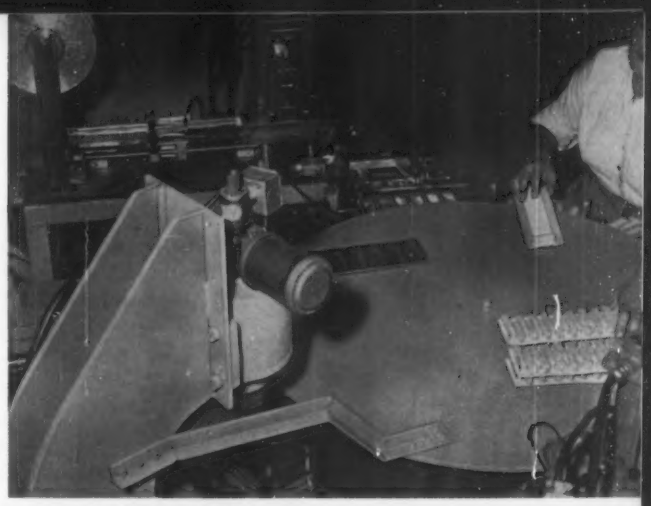
Radiation sterilization

Ethicon has two electron accelerators for production purposes: a 7,000,000-electron-volt unit, which handles most of the output, and a 3,000,000-electron-volt machine for standby use. For the 7,000,000-electron-volt machine, the pouches are simply stacked on their edges in a tray.

The electron units are located below ground level in a building 250 ft. away from the rest of the plant. For personnel protection, trays are transported to and from the radiation source by underground conveyors. To prevent a tremendous backlog of unprocessed trays on the belts during operations, a special escapement at the roller-track entrance to the underground tunnel permits each tray to pass onto the power conveyor only at the same rate of speed as trays pass under the electron beam.

Tray loads of packets enter the radiation area by means of an L-shaped tun- [*Continued on page 173*]

SUPPLIES AND SERVICES: Roll-stock laminated materials by Dow Chemical's Dobeckmun Co. Cleveland 13. Van de Graaff and microwave linear accelerators by High Voltage Engineering Corp., Burlington, Mass. Jar cleaner and filler by MRM Co., 191 Berry St., Brooklyn 11. Capper by Resina Automatic Machinery Co., 572 Smith St., Brooklyn 31. Labelers by Labelette Co., 216 S. Jefferson St., Chicago 6, and New Jersey Machine Corp., Hoboken, N. J.



Automatic former *for bottom of packet works from laminated foil-PVC roll stock (rear left). Multiple cavities are formed in the web, which is then cut off and transferred to the loading table.*

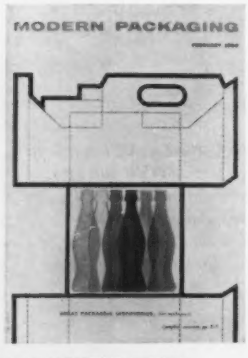
Needle fillers *(right) pump preservative fluid in packets, then heated irons seal openings. Individual pouches are cut from web in punch presses (left).*

Final packaging *operation places packets in a glass jar, where they are submerged in a sporicidal solution that sterilizes outside of packages so that they are ready for instant use in a surgery.*

THE MULTIPACK

Started as a convenience idea for bottled Coca-Cola, it became one of the biggest unit-of-sale boosters for canned beer, foods and all types of packaged merchandise

GREAT PACKAGING DISCOVERIES—12



THIS MONTH'S COVER

It began in the fall of 1922 when a peevish picnicker entered a new self-service grocery in Atlanta and complained because he was forced to buy a whole case of Coke just to get a convenient carrier for a few bottles. Fortunately, his plaint was overheard by Harrison Jones, then The Coca-Cola Co.'s vice president of sales (who retired as chairman of the board in 1954), and the idea for the merchandising multipackage—also called the six-pack, the home-pack and the carry-pack—was born.

The technique of stimulating multiple purchases by combining in a handy unit a number of packages designed for single sales was a fresh thought—as fresh and as suited to modern merchandising as the new supermarket where it was conceived. Use of the package spread rapidly to all soft drinks, then to canned and bottled beer and, in the last few years, with major improvements in loading machinery, to multi-unit deal and premium packages for a wide variety of bottled, canned and cartoned food and non-food products in combinations ranging from two to 12 units per multipack. The enormous and widespread success of this idea in many packaging areas unquestionably qualifies it as a *Great Packaging Discovery*.

It would be reassuring to say that the multipack became an overnight success, but actually it took years and the effort of many packagers and suppliers to establish it. Initially, Jones pushed the idea vigorously and, with the late Joseph Hirsch and Ferdinand Kaufman of the Empire Printing & Box Co. of Atlanta (since merged with Packaging Corp. of America), he designed the first paperboard six-pack, which was patented Sept. 23, 1924. Constructed of heavy corrugated board, this fully enclosed carton had a peaked top that contained a "handle of invitation," as Jones aptly called the convenient carrying feature that has characterized almost every version of the six-pack for bottles introduced on the market since that time.

Market tests started at once in eight Southern cities with an aggressive promotional campaign that included give-away coupons for free cartons of Coke, towering mass displays and attractive demonstrators in food-store booths. But six-pack sales picked up very slowly. The only exception was in New Orleans where, by an inexplicable marketing quirk, the carton caught on immediately. By 1927, six-pack sales of Coca-Cola in that city had jumped to a figure of more than 180,000 cartons per year.

Jones and his associates hammered away at their primary market with major speeches at bottling conventions. At one of these promotional forays, Jones predicted that the day would come when total sales of Coca-Cola in six-packs would exceed gallonage then sold by bottlers. Few packagers of bottled products took this eventual truth seriously.

Soon the intensive promotion began to pay off, following a concentrated barrage of special merchandising brochures, consumer folders and striking window displays. Only one major objection—high price—now kept the multipackage from winning general acceptance by local bottlers. Designed for many trips, the corrugated carrier was undeniably rugged, but it necessitated a deposit and required considerable labor cost for hand cleaning and sorting each time that it was returned to the bottler.

The solution to these problems came in 1935, when a New York Coca-Cola bottler devised a completely different one-trip carrier, made of lightweight paperboard that cost only a penny. Called the open-type carton, because it had no end panels, this simple folded carrier contained die-cut holes, both in the base to lock the bottoms of the bottles in place and in the top to allow the necks to protrude. Immediately adopted, it served as a major merchandising weapon through four years of intensive promotional battles that saw the six-pack carrier established as a merchandising success.

In 1939 came the end-strap carton, which was easier for the bottler to load and for the consumer to empty. Incorporating the well-known full-end panels, open top and center handle, this basic container with a few modifications is still used today. With the advent of one-trip beer bottles, this multipack met the demands of supermarket operators for an inexpensive carton to multiply the unit of sale without annoying refunds.

After the shortages of World War II ended, six-packs promptly resumed their steady climb in popularity, aided by the introduction of ingenious automatic loading equipment. Still on the rise today, use of this merchandising package by the entire packaging field reached an estimated 3.5-billion units in 1959. Such volume usage could not have occurred, however, without the development of automatic high-speed machinery to match the ever-increasing production output of modern bottling and canning lines.

The first equipment was the Dacam machine, introduced in 1947; Johns-Nigrelli-Johns and Rockwell units were launched the following year. First installation of the Dacam machine, then made by the Dacam Corp. but later licensed by the Continental Can Co., was at Coca-Cola. It was quickly applied to sleeve-type six-packs and canned beer for Pfeiffer Brewing Co., Detroit. The J-N-J machine, sold by the Container Corp. of America for use with their Can-Band multipack sleeve, moved directly into the brewing field at Miller Brewing Co., Milwaukee, and later into the multipackaging of all canned products used in volume. The Rockwell Mfg. Co., which was later purchased by Emhart Mfg. Co., sold its first machine to Drewrys, Ltd., U.S.A., a South Bend packer of canned beer.

With these machines came innovations in carton design that included locking-tab closures for high-speed assembly, fully enclosed cartons that give a maximum "billboard" surface and streamlined multipacks that capitalize on a minimum amount of paperboard for impressive packaging economy.

Today, open and sleeve-type multipacks and the advanced machines that assemble and fill them at speeds up to 1,200 per minute have spread to a variety of packaging areas and are particularly important for canned products. While still serving their primary function as multiple sales units, these modern carriers have lately been utilized for special deal and premium combinations in foods, household products, toiletries, motor oil and hardware. Now combined in the same multipackage are assortments of product containers with radically different shapes and sizes. Such premium items as phonograph records, dish cloths and sponges have been incorporated in the paperboard bands. The package itself has even been designed to do double duty as a punch-out toy. Efficacy of the multipackage as a merchandising tool to move bumper supplies of canned foods has been documented by such retail research programs as the pioneering "Philadelphia Project" (underwritten by the National Canners Assn. and Container Corp. of America) and other supplier marketing studies.

New applications of multipacks will probably never end, since they come out of the imaginations of sales and promotion men who must constantly change and improvise to meet demands of modern supermarket, high-volume merchandising.

The idea took hold *in 1929 with Coke's corrugated six-pack as shown in the above reproduction from a newspaper ad of that year. Today there are dozens of simple multipack constructions used for virtually every type of bottled and canned product.*

THEY'RE WHITE CAP

the White Cap FIELD ENGINEER

White Cap's far-famed engineering service isn't just a home plant activity, by any means. Many of its finest achievements are scored right out in customers' plants.

This is where that unique group, *the White Cap Field Engineers*, come in so effectively.

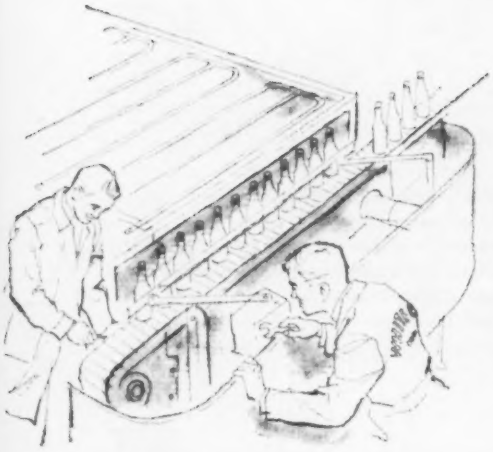
Every White Cap Field Engineer has fully earned the right to be rated as a packaging line planner and consultant. He is at home with any phase of line layout. He functions equally well on the revision of an existent line or the planning of a completely new line.

In all his activities, the White Cap Field Engineer has the extra advantage of strength drawn from White Cap's unequalled pool of glass pack know-how.

Over the years, the work of these field consultants has literally made them famous throughout the industry. Rare, indeed, is the glass pack line that hasn't felt their beneficial influence.

Where else in their field is there another such example of *service-in-action?*

SERVICE-IN-ACTION



the White Cap FIELD SERVICE MAN

Here's a man who really knows his way around a glass packaging line.

Coast to coast, packers recognize him as the watch-dog of the sealing stage.

He's the man who handles immediate situations, and can also act with unique efficiency as a long-range preventive maintenance specialist —and as a teacher.

As part of the largest field service force of its type, he's not just an occasional trouble-shooter, but *a regular visitor*. On his routine visits to our customers, he brings them expert knowledge of the conditions that make for maximum production and maximum sealing efficiency.

What's more, his capabilities have earned him a reputation as a practical advisor on quite a range of packaging line problems.

White Cap Field Service men don't have to come all the way from headquarters, either. Locally located, in strategic spots from coast to coast, they can be on the job fast.

Unequalled anywhere in their special field, *they are White Cap service-in-action.*

WHITE CAP COMPANY

SUBSIDIARY OF CONTINENTAL CAN COMPANY

2-60

PACKAGING PAGEANT

1

2

3

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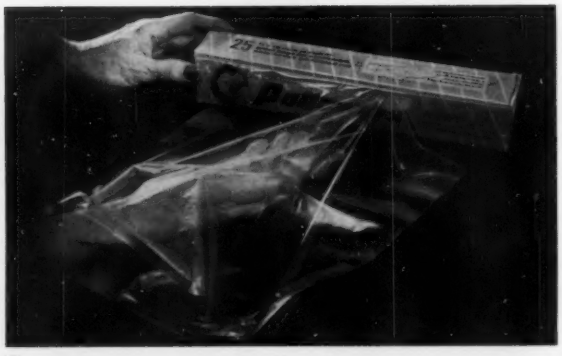

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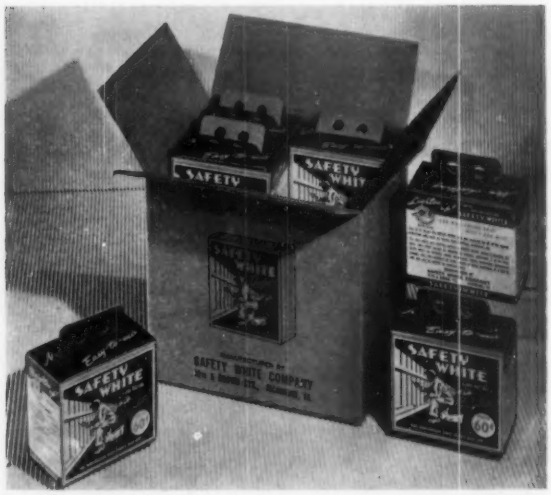


7

1 The efficiency of blister packaging for large, bulky items is illustrated by this 16-in.-long thermoformed package for a 13-in. aluminum soldering tool, refill brush and solder. Handle of the tool, marketed by Reynolds Metals Co., is recessed in a die-cut opening in the card to achieve a flatter package. Film used is a 0.003 flexible vinyl plastic. Packaging by American Packaging Corp., Cleveland, using Goodyear's V12 vinyl supplied by Flex-O-Glass, Inc., Chicago. Vacuum-forming machine, Comet Industries, Franklin Park. Ill.

2 Ella the Elephant and Corny the Clown are two new trade characters winning new retail outlets for polyethylene-bagged popcorn, marketed by the 'Pop' Corn Sez Co. The product is now sold in grocery, variety and drug stores, as well as supermarkets on the East Coast. The 7-by-22¾-in. side-weld bags, with colorful jumbo illustrations, may be stuffed with cotton, when empty, to make large, colorful toys. Bags, Milprint, Milwaukee.

3 Inexpensive, lightweight plastic trays, vacuum formed of polyvinyl chloride to fit the product (see "Fruit Cradle," MODERN PACKAGING, July, 1958, p. 135), have been adopted by Westinghouse for three types of Christmas bulbs, as well as the company's new Decro-Lite bulbs. Each slide-out tray holds five bulbs which are fully visible through the

window of the folding paperboard box. Trays, Panta-Pak Div., Pantasote Co., New York.

4 Straight, clean lines of the new glass jar for P. J. Ritter Co.'s Relish are designed to create a better shelf impression. Its wider mouth facilitates filling and removal of contents. An indented label area minimizes label scratching. Jar, Armstrong Cork, Lancaster, Pa. Foil label, Reynolds Metals, Richmond. Lithographed metal cap, Continental Can's White Cap Co., Chicago.

5 Prefabricated polyethylene bags in roll form are being marketed by the Kennedy Car Liner & Bag Co. in a dispensing carton similar to that used for waxed paper. The bags, perforated between the heat seals, may be ripped off one at a time by snapping the perforations against the side of the carton. The varnished paperboard box holds a roll of 25 "Pollysak" bags. Carton, Central Carton Co., Cincinnati.

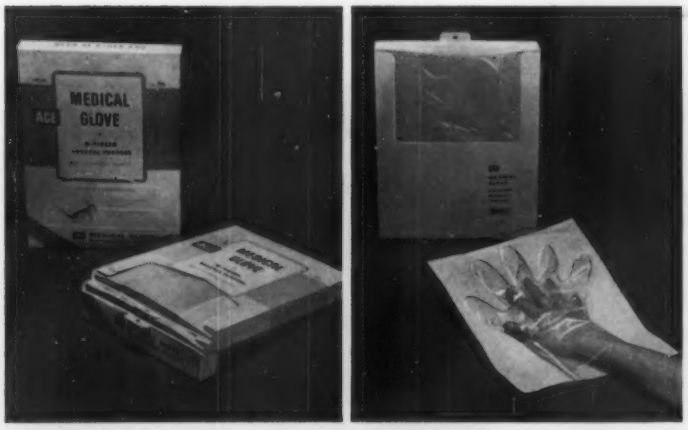
6 By printing one face vertically and the other horizontally, greater shelf-display value is achieved for bags of "Joy" dog food, a new product by Best Feeds & Farm Supplies. This technique permits bags to be stacked either on their sides or bottoms. The bag's innermost ply is a grease barrier, a natural kraft center ply gives strength and the outer ply of supercalendered white kraft provides an attractive surface for high-gloss printing. The bags are made in 5-, 10-, 20-, 25- and 50-lb. sizes. Bag, Arkell & Smiths, Hudson Falls, N. Y.

7 A luggage-style, carry-handle, corrugated pre-pack carton is aimed to encourage sales of Safety White Co.'s Whitewash. The colorful orange and blue cartons, illustrating a "do-it-yourselfer" whitewashing a fence, create effective store displays. Box and contents weigh 5 lbs. and 12 cartons come in a master shipper. "Prepak" and shipper, West Virginia Pulp & Paper's Hinde & Dauch Div., Sandusky, O.

8 Becton, Dickinson's new hospital package for disposable polyethylene gloves provides convenient dispensing in two ways. As a stand for use on stretcher, utility cart or supply cabinet, the prescored carton top folds under to form an easel. As a wall dispenser, the carton's inner trays, each containing 72 gloves, have grommets for wall hanging. Slip sheets with each glove are color coded for quick size (small, medium and large) identity. Inserting the hand into the glove releases the slip sheet. Surface design, E. C. Tickner, Summit, N.J. Trays and cartons, Central Fibre Div., Packaging Corp. of America, Omaha.

9 A trend to upgraded butter packaging is indicated by H. C. Christians Co.'s new Pride brand butter carton. The Eastern flat style carton is foil laminated, one-side waxed, and distinctively designed in brown and gold colors. Printing on the aluminum foil is by offset lithography. Carton, American Can's Marathon Div., Menasha, Wis.

10 A pressure-formed inexpensive container of nonplasticized polystyrene sheet is reportedly building sales for Stevens Candy Kitchens' lines of fudge products. The white tray is formed from 0.015-in. sheet; the 0.005-in. transparent sheet used for the cover allows full visibility. When the tray is inverted, scoring provides guide lines on fudge for cutting. Closure is designed for repeated opening and reclosure. Container, Paper Package Co., Indianapolis, using Plax "Polyflex" sheet.



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10

Tilt-fill to cut foaming

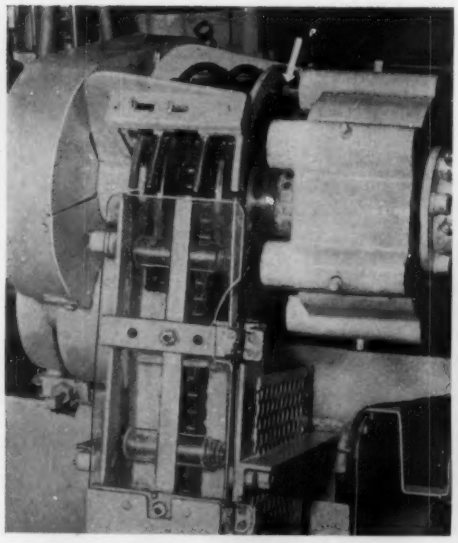
Adopting a trick
that every beer drinker knows,
Bristol Myers tips bottles in filler
so product flows down inner wall.
This technique and all-rotary line
increases output
of roll-on packaging 150%

A major advance in the speed of filling a foaming product has been scored with the installation of a 300-per-minute line at Bristol-Myers Co. (5,000 employees, $113,870,000 gross), Hillside, N. J., where the old bartender's trick of pouring beer down the inner wall of a glass to reduce the head has been put to work for packaging roll-on deodorants.

Further ingenuities in automatic assembly of the precise and complex parts that make up the roll-on package demonstrate advanced mechanical techniques for unscrambling, feeding and combining odd-shaped package components.

The new all-rotary cleaning-to-capping sequence for both 1- and 1½-oz. glass bottles of Trig and Ban deodorants has already doubled the plant's production by operating at a rate of 240 packages per minute during the run-in period.

Previously, speed was restricted by two factors: (1) the relatively slow and precise assembly of the

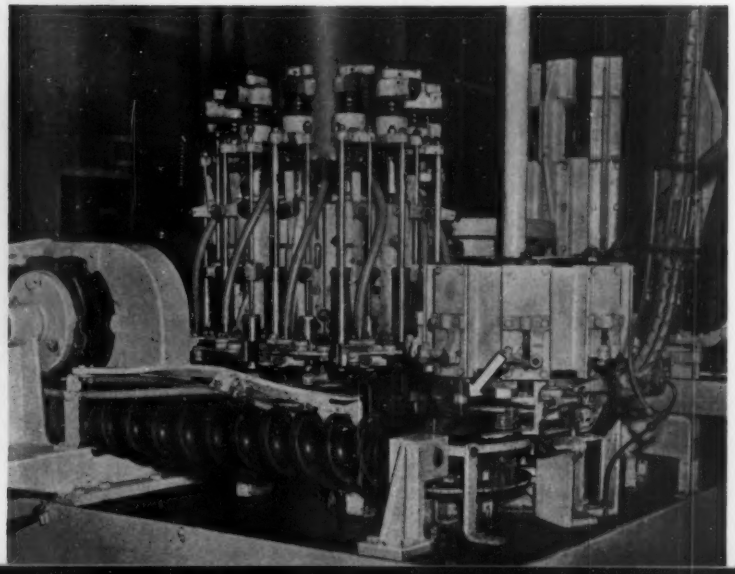


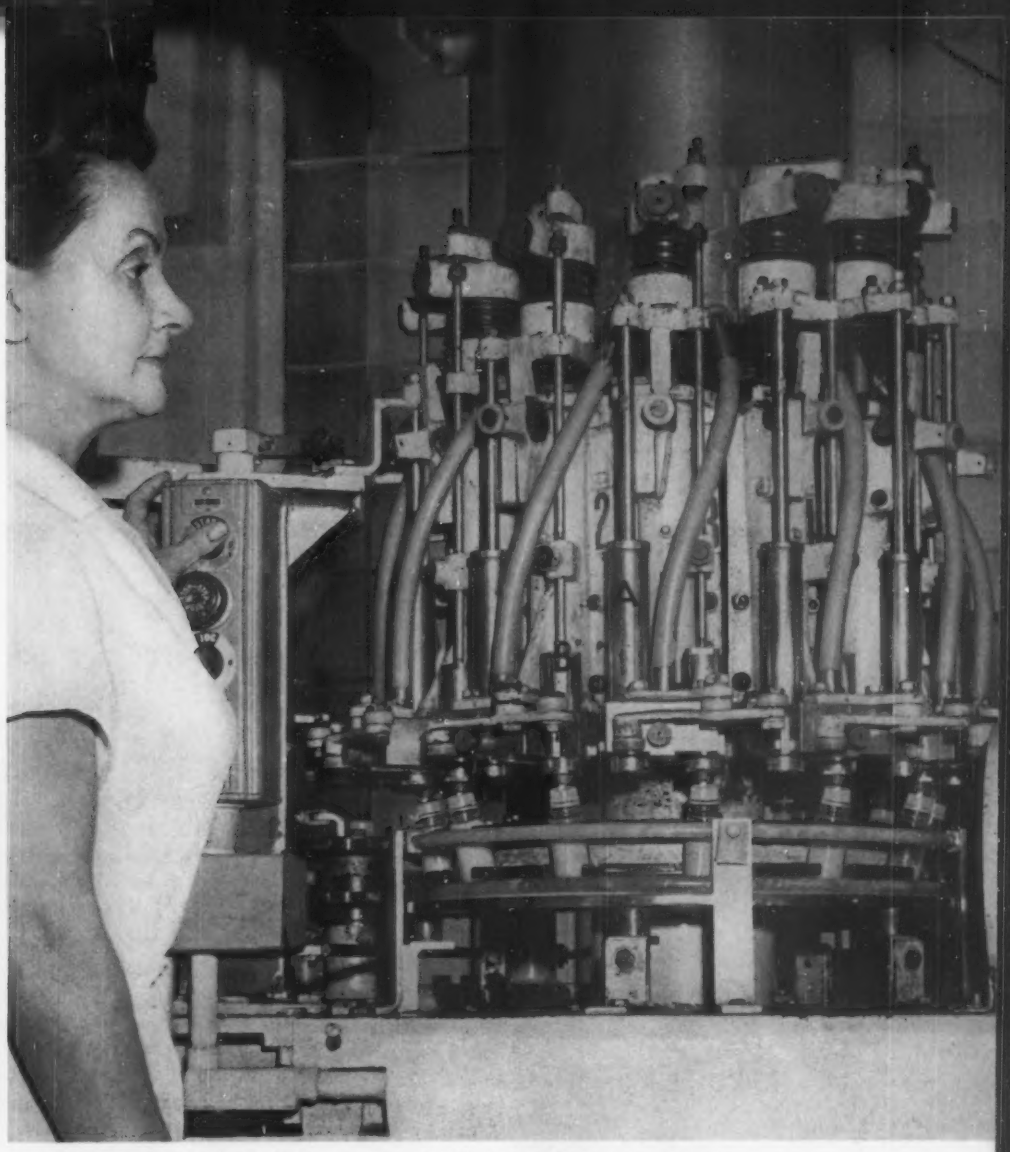
CLEANING

Positive-positioning *horizontal turret (left) and a synchronized second turret (right) equipped with cam-action air-blast nozzles (arrow) clean Trig deodorant bottles after they arrive on elevator infeed from lower-floor storage area. New integrated line assembles complex units of glass roll-on package at high speed.*

RINGING

Rotary-head piston *(arrow) snaps polyethylene ring in place. For this operation, bottles are positioned vertically by worm screw (center) which receives them horizontally from the indexing turret (left).*





10-deg. tilt *of bottles during filling is an unusual technique to eliminate foaming of this viscous deodorant. Anti-froth nozzles employ conventional volumetric piston and cylinder (A) plus gravity feed from a chamber (B) equipped with float valve for positive cut-off.*

several complex components of the package and (2) the tendency of the viscous product to foam in high-speed filling operations.

Key to the solution of these problems is the rotary-filling-head's unusual design—believed never before used in packaging machinery—which utilizes the principle instantly recognizable by any beer drinker who prefers a minimum of foam on his brew. The new unit simply tips the bottles as they move under its filling nozzles so that the product stream flows smoothly down the inner wall of the bottle without entrapping air.

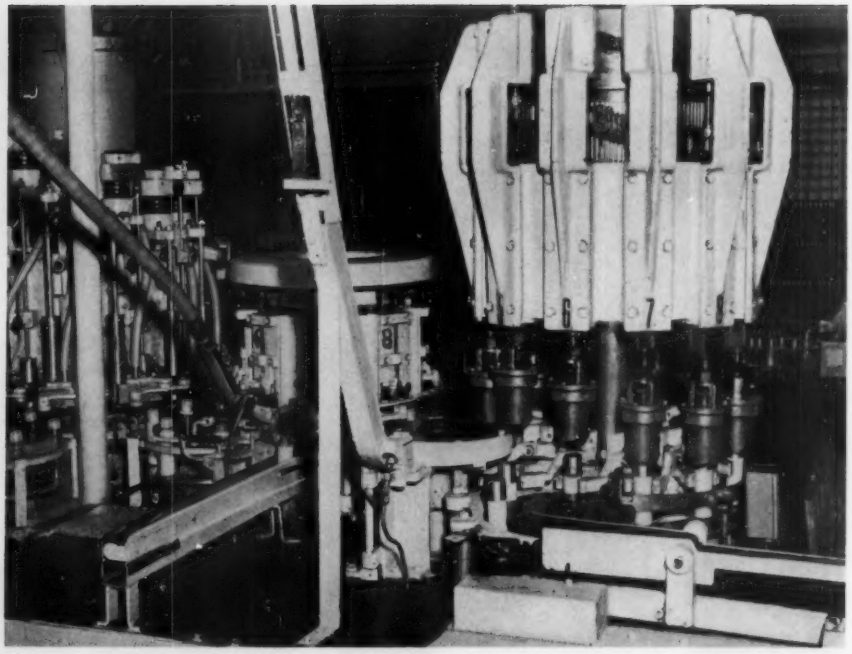
Coupled with other rotary devices that align and clean the bottles and add the ball retaining ring, ball and cap, this integrated assembling and filling unit demonstrates several advanced ideas for handling glass containers. A labeler, cartoner and bundler, all connected to form a complete and continuous L-shaped line, illustrate efficient techniques for using thermoplastic labels and both foil-laminated and regular cartons and also for applying easy-opening wrappers to the final bundled packages. The compact new line replaces a series of five-lane reciprocating units that previously was able to handle only 120 bottles per minute.

The new line is located on the fourth floor of the plant, with unscrambling and final casing equipment on the third floor, from which point the empty containers start on their way.

Advantage is taken of the bottles' cylindrical shape

CLOSING

CAPPING



Ball inserter *(left) starts closing and capping by pushing ball applicator into place. Capper (right) gently threads gold-sprayed closure on each bottle. Dead-end track (left) holds incompletely assembled bottles eliminated from line flow by an automatic device.*

Cartoning *is aided by extra tabs (arrow) on built-in carton dividers that guide bottle into place. Carton flaps are cut back heavily to facilitate high-speed handling. Extra-large carton provides more display space and discourages pilfering.*

LABELED

by rolling them up to the point of package assembly. Thus, glass bottles, uncased by hand, are placed horizontally on a gravity track at the third-floor level. Picked up by a bucket elevator, the containers are raised to the packaging unit where, still lying in a horizontal position, they transfer to a turret. A second turret, parallel to the first and synchronized with it, is equipped with cleaning nozzles, which are cammed into position at the mouth of the bottles to clean them with a strong air jet.

Bottles are next "stripped" from the cleaning turret by an indexing wheel that feeds them into a synchronized worm. This device, equipped with stationary guide rails, turns the containers into a vertical position for subsequent packaging operations.

First actual step in assembling the roll-on package is the addition of the ball retaining ring to the neck of the glass container. These polyethylene collars are unscrambled in an overhead, disk-type feeder and moved to the machine in a slide track. Bottles enter a rotary head via a star feed and the collars—picked from the track by the head—are snapped into place by cam-operated plungers. A groove in the plastic ring fits over a lip molded in the bottle. This completes preparations for the special filling.

A transfer star whirls the bottles through a 180-deg. turn into the filler, where a canted track simul-

taneously tilts them outward 10 deg. from the vertical. This angle forces the vertical product stream from the filling nozzles to strike the inner wall of the bottle, thus eliminating entrapment of air. Outside guide rails of nylon tubing over a steel core support the leaning containers. The plastic surface reduces sliding friction to a practical operating point as the bottles are pushed around the track.

Nozzle design in the filler also helps to eliminate foam and increases the accuracy of fill. The liquid deodorant flows from a central filler bowl through plastic tubes to intake ports on each of the 12 filling cylinders. Here, sliding valves allow the liquid to flow into the measuring cylinders as cam-operated pistons are raised. Exact product volume is set by delicate adjustment of threaded nuts on the piston stems that limit piston travel.

As each piston is cammed down, the sliding valve cuts off back flow and the entrapped product is forced through a cut-out portion of the valve into a second cylinder equipped with a float valve. From here, product flows by gravity into the bottle. The float valve drops into closed position as soon as the system reaches atmospheric pressure—accurately cutting off flow and insuring no drips. Final packaging components are quickly applied to the container by two additional mechanisms.

Filled bottles are transferred by star wheel to a rotary head that snaps the roll-on ball into place in the plastic ring. These polystyrene balls are fed by means of a circular vibrating feeder into a plastic tube that delivers them to the head, where they are picked off and punched into place by pistons much as in the earlier ring-assembly operation.

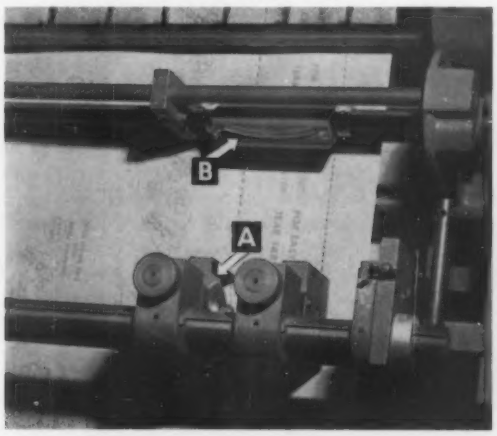
Another star wheel then spins the bottles into the capper. Special care is necessary in handling closures on this unit, since new gold-sprayed phenolic plastic caps used on Ban bottles are easily scratched by rough handling. Located above the machine, the squirrel-cage unscrambler aligns caps right side up and transfers them to a tilted spinning disk. Caps are gently guided into a gravity track leading to a conventional turret-type cap pick-up and to expanding-collet chucks that tighten the closures. Modifications in this unit were confined to adjusting chuck jaws so that they open before the chuck is cammed upward, thus preventing damage to the gold-surfaced caps. Adjustment of capping torque also is critical to prevent cap damage.

At the collar, ball and capping stations, lever-type safety devices are installed to detect bottles lacking appropriate packaging components and to shunt them onto a side track for removal.

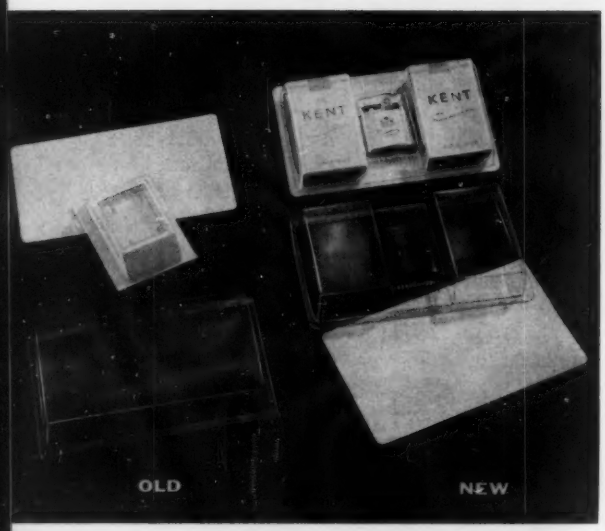
Passing around a 90-deg. bend the bottles enter a high-speed, straight-line, thermoplastic labeler, after which the containers are turned on their sides and pushed into folding cartons by a continuous cartoner. The latter unit has built-in flexibility of adjustment to handle both a standard clay-coated newsback carton used for the Trig deodorant and a new foil-laminated carton employed for Ban in both the 1-oz. and the 1½-oz. size. [*Continued on page 174*]

SUPPLIES AND SERVICES: Integrated filler by American Can, 100 Park Ave., New York 17, with ring and cap-sorting components by Consolidated Packaging Machinery, Buffalo 13, and ball feeder by Syntron Co., Homer City, Pa. Thermoplastic labeler by New Jersey Machine, Hoboken, N.J. Cartoner by R. A. Jones & Co., Cincinnati 1. Bundler by Package Machinery Co., East Longmeadow, Mass.

Price marking *is facilitated by full tear opener on overwrapped bundles (above) which is applied by simple attachments to web feed on wrapping machine (right). Here, perforated lines are added by serrated circular knives (as at A). Pull tab is cut into the paper by a rotary knife (B).*



Within months, money- and time-saving improvements



How quickly modifications in package structure sometimes can be made to save time and money is illustrated by improvements in the slide-track thermoformed blister pack for a cigarette lighter and two packages of cigarettes adopted by P. Lorillard & Co.—just a few months after introduction of the original package. (See "Bargain in Plastics," MODERN PACKAGING, Dec., 1959, p. 103.) The first modification was that of rounded corners replacing square ones to enhance appearance and development of "cut-back" tracks to permit easier insertion of the paperboard backer, thereby saving considerable loading time.

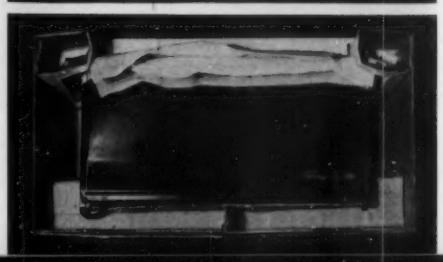
The third and present package eliminates the need for a separate thermoformed platform to hold the cigarette lighter by incorporating the lighter and cigarette-pack compartments in the same formed piece. Not only does this reduce the over-all cost of the package about 25%, but it also reduces loading time, making it considerably easier and faster for Lorillard field men (who are responsible for assembling the packages) to fill them. *Designer of all three package constructions and producer of the improved versions, Plaxall, 5-26 46 St., Long Island City, using Celanese acetate.*

COST

Better shipper, lower cost

The combination of an ingeniously constructed corrugated shipping container and strong, lightweight cushioning paper has cut 30% from the cost of packaging Mary Proctor electric toasters, says Proctor Electric Co., Mt. Airy, N.C. The company formerly packed six individually cartoned toasters in a master shipper. To fill orders for less than six toasters, the shipper had to be broken open. This increased the possibility of product damage, since the individual cartons were not designed to stand up under rough handling.

To solve its problem, the packager decided to abandon master shippers in favor of single-unit cartons. Proctor and its suppliers developed a one-piece corrugated shipper with die-cut flap ends that eliminate the need for separate liner sections. As shown in the cut-away side-view photo, the flap ends add rigidity to the finished carton and float the toaster to guard it against handling damage. A sheet of soft cushioning paper prevents scratching of the toaster's chrome surface. *Shippers by Container Corp. of America, 38 S. Dearborn St., Chicago 3, and Columbia Container Corp., 2240 Annapolis Ave., Baltimore. "Super Crepe Kimpak" cushioning paper by Kimberly-Clark Corp., Neenah, Wis.*



Modified for a 67% saving

A simple modification of a cotton-stuffing machine—which enables it to accommodate multiple units of dome-topped, bottom-loading glass vials—is the device by which Lederle Laboratories has chopped 67% from the cost of packaging sample quantities of Achromycin pharmaceutical capsules. Because the dome tops make the containers impossible to handle on conventional conveyor lines, cotton formerly had to be inserted by hand. Three workers were needed to keep up with production demands.

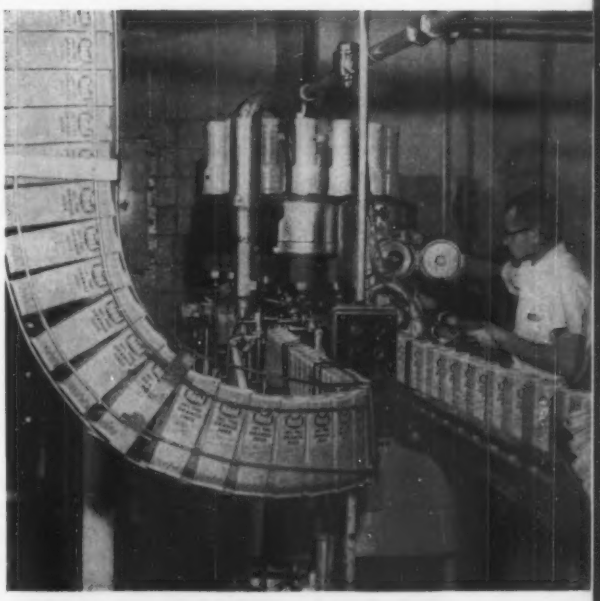
The modification which permits machine stuffing of cotton by a single operator at 60 vials per minute consists of an acrylic plastic "boat" with two staggered rows of holes and a platform with adjustable back rail, which is mounted above the machine's conveyor. The bottom-loading vials, each containing four capsules, are inserted dome down into the holes in the boat. They are held snugly in place as the operator slides the boat along the platform and under the machine's stuffing head. For easy stand-up, the filled containers are fitted with a flat-based polyethylene snap cap. *Cottoning machine by The Lakso Co., Fitchburg, Mass. Vials and caps by Kimble Glass Co., sub. Owens-Illinois, Toledo 1.*

CUTTERS

Milk filler for orange juice

A machine originally designed for milk filling is being used by a Florida orange-juice processor to relieve a tautening strain on its production facilities—at a "significant" saving in the over-all cost of packaging. The company is Halco Products, Orlando. Early in 1956 it began operations as a packager of orange juice in half-pint and quart flat-top waxed-paper containers for shipment to markets as distant as Nova Scotia. During the next three years, says the company, customer demand rose to the point where it became obvious that the filling equipment then in use could not keep pace with production requirements.

Faced with this fact, Halco installed a 15-valve filling machine which had been proved out in the dairy industry. The packager reports that the new unit fills 125 half-pint and 95 quart containers per minute—more than double the speeds formerly achieved. In addition, change-over time has been slashed from 45 to 15 minutes. The filler is made ready to accommodate different-size containers simply by turning a nylon overcap on the displacement plunger of each filling valve and by adjusting the conveyor guide rails. *Filling machine by American Can, 100 Park Ave., New York 17.*



Racing the F&DA deadline

There's a little more light and a little less heat in Washington with Food Additives compliance date only a month away; industry groups are showing the way to effective action

With only a month to go until the all-important deadline for compliance with the new Food Additives Amendment to the Food, Drug & Cosmetic Act —banning after March 5 the use of all untested chemicals and packaging materials that are not "generally recognized" as safe*—Food & Drug Administration officials, packaging associations, individual suppliers and supplier groups are working feverishly to clear materials or, where this is not possible, to work out one-year extensions for chemicals that require further study. Though petitions and clearances have still been few and many tough problems remain to be solved before the March 6 deadline, some significant moves stand out:

1. Recognition of some packaging chemicals as safe has been obtained through organized effort by industry associations. Other chemicals and materials have received an unofficial nod and may be confirmed by F&DA shortly.

2. Procedures for applying for 12-month test extensions for materials in use before Jan. 1, 1958, have finally been outlined by F&DA—although with no assurance to anyone that an extension will be granted. On Dec. 31, last, F&DA suggested that such applications be submitted before Feb. 1, so that action can be assured before the March 6 deadline. The agency has also clarified the status of supplier guarantees—a vital question to packagers.

3. F&DA's procedure for listing chemicals believed safe and clearing them through more than 800 qualified experts has reportedly been speeded up. This should speed issuance of a new "white list" of packaging chemicals and materials, expected shortly.

4. In what some observers see as a precedent for a "hardship case," F&DA stayed for 25 days, until Jan. 31, its decision on appeals by lipstick manufacturers against its drastic order banning the use by that industry of coal-tar dyes.

An example of good procedure toward definitive clearances has been set by the National Paperboard Assn. and the American Paper & Pulp Assn. with a joint research project that has been publicly acclaimed by F&DA officials. Because of the number of chemicals involved in their food-packaging materials (estimated by some to exceed 200), the papermen needed a fast start. All chemicals used in paper have now been cataloged (those used by less than four paper suppliers have been sidelined as too limited for industry action). Already a list of 96 compounds, deemed safe by recognized toxicological experts, has been circulated to association members for their use. Though F&DA has not formally approved this entire list, it is significant that about 30 of these chemicals are also in the list of compounds recently published as safe by F&DA† and the papermen feel sure that they all will receive official approval before very long.

The remaining paper chemicals—including some resins and the waxes, which need additional work—will be tested mainly by suppliers, with NPA and AP&PA serving as a clearing house for data.

Inter-industry action

Continuing its previous efforts to acquaint F&DA with the problems of the packaging field, the Inter-Industry Packaging Group—composed of representatives from nearly 40 supplier associations—planned a January meeting to discuss sending a delegation to Washington. Noting that any extensions merely set back the day of reckoning and do not solve the basic problems, Paul S. Hanway of the National Fibre Can & Tube Assn., chairman, advised this group that F&DA is willing to meet with any trade-association men authorized to speak with authority on basic matters of compliance.

Also active has been The Society of the Plastics Industry, which has assembled copious information on the legal and technical aspects of the new law and compiled a guide on how to obtain data on migration, safety and the legality of food-packaging uses for plastic films. These facts are published in two comprehensive manuals, also praised by F&DA.

Meanwhile, 13 major [*Continued on page 172*]

*See "The Food & Drug Crisis: How Now?" MODERN PACKAGING, Nov., 1959, p. 134.

†See "F&DA White List," MODERN PACKAGING, Jan., 1960, p. 176.

"Knox furnishes us the packages that sell," say executives of major olive and pickle packer

"When packed in glass, stuffed olives—with their eye-catching colors—are a real stop signal to grocery store shoppers," says the manager of the olive department of one of America's leading food packers,* a major user of Knox glass.

"In our olive department, for example, 85% of the glass jars we use—in nine different sizes—are Knox products.

"We take full advantage of Knox's quality and clarity by hand-packing our olives in patterns that give maximum package attractiveness. We've found that this, plus proper display in the store, can increase a grocer's olive sales by ten to fifteen percent."

*Name available on request.

The manager of the same company's pickle department says: "In modern supermarkets, the product has to sell itself. That's why we use glass—to take advantage of impulse buying. Knox's quality glass can take the strain of the packing process—including the thermal shock of pasteurizing—and still give us the best available sales package."

Find out how Knox's quality product, reliable delivery, and outstanding service can play an important role in increasing your sales by furnishing the package with maximum shelf-impact. Contact Knox Glass, Inc., Knox, Pa., or any one of Knox's 37 sales offices.

the new / **KNOX GLASS**

Continuous skin-type

Replacing usual vacuum contouring with stretchable PVC film, new cost-cutting technique combines individual jigs with electronic sealing to card mount 50 varied items in the Beltx line

Following the sound production precept that "it is better for a machine to push an operator than for an operator to push a machine," Beltx Corp., St. Louis producer of personal products, has itself devised a radically new type of skin package turned out on an ingenious company-built line that:

1. Employs continuous-production equipment potentially capable of almost any rate of production that might be desired.

2. Cuts packaging costs to about three-quarters of a cent per unit—a 10% saving over former packaging in overwrapped tray packages.

3. Creates a strong, flexible container capable of securely holding even the bulky type of items or awkwardly shaped products.

The result is a modern, self-service, hang-card package for attractive visual display of the more than 50 products in the company line.

The new skin-type package is utilized in two forms: (1) a folder pack for such bulky items as sanitary belts where the product and film are electronically heat sealed in a folded window card and (2) a single card for accessory products with the film sealed to the surface of the card.

Unlike conventional skin packaging, no vacuum is used to pull the film tight on the new package. Instead, a continuous web of 2- or 3-mil stretchable polyvinyl chloride film is held under tension during the packaging operation. Memory in this plastic material causes it to conform to the general contours of the product after the package is heat sealed. This eliminates the necessity of heating the entire film and board area. Instead, simple rectangular dies electronically heat seal around the edge of the card, which is coated with a vinyl formulation. Film tension holds product in place. By a simple change in die design, multipocket packages can be formed for several accessory items.

Company officials report that consumer acceptance has been very good. The vinyl film has a feeling of softness compatible with the feminine product and it assures excellent shelf life under wide variations of air temperature and humidity. Both spindle and basket arrangements have been used in pegboard displays of the products. Reportedly, the basket approach is particularly effective where multiple product sizes are offered, since it enables consumers to make their selections without having to remove packages from a hook.

The new packaging technique employs three important mechanical changes from conventional skin-packaging methods: (1) a series of movable, independent jigs or molds that are pushed around a track, (2) an electronic sealer that avoids long heating and cooling cycles and (3) automatic unloading of the packages in a continuous strip, which is later inspected and divided into individual units by a separate operator.

Four of the new packaging lines—two for each style of package—have been built by Beltx to

Card package, *with stretched PVC film sealed only around edges of front surface, replaces overwrapped card. This package is used for many accessory products and can be divided into separate compartments. The soft, crystal-clear film gives maximum merchandising value and is easily ripped apart to open the package.*

packaging

Rows of jigs, *pushed around track by reciprocating rams, put formation of new skin-type package on non-stop basis. Note how roll-fed polyvinyl film stretches over entire line of folder cards in jigs on line's loading section. As each package is filled, the jig is closed for sealing.*

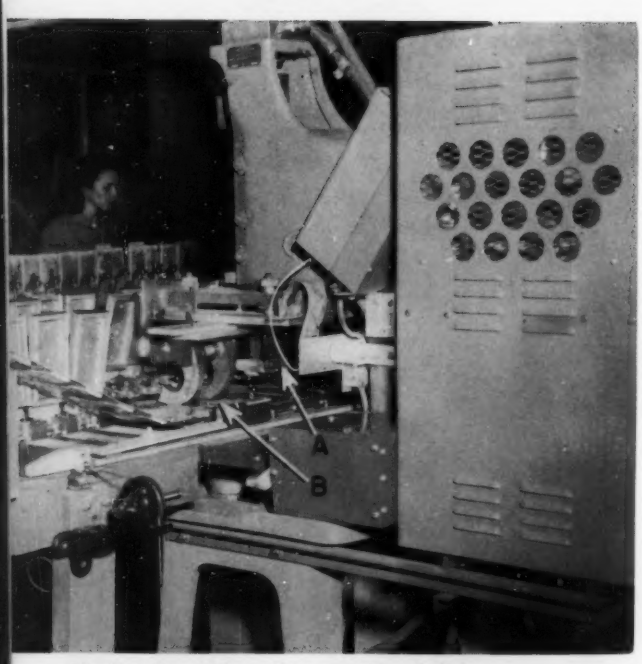
handle production needs running to several million packages per year. The operation, which is covered by a number of patent applications, is estimated by company officials to save 40% over the cost of a conventional skin package. Beltx intends to supply these machines to other packagers.

Folder pack

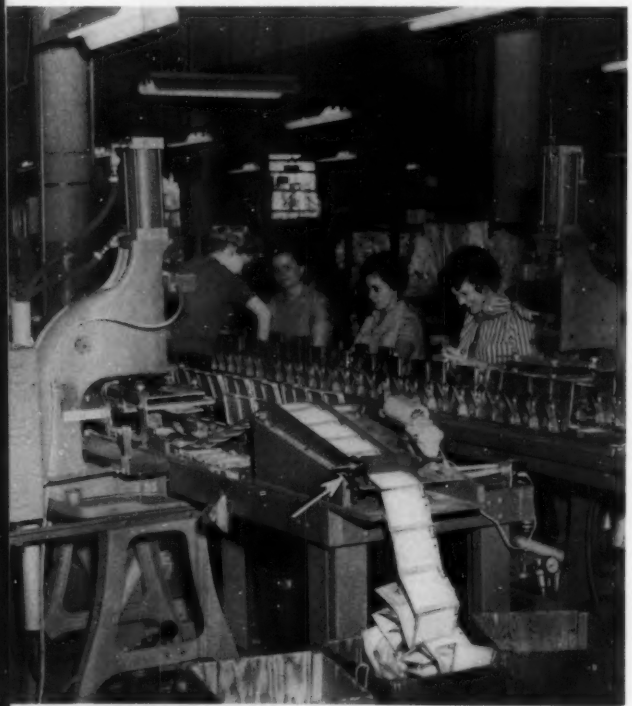
While both types of packaging machines have essentially the same mechanical action, one of the folder-pack lines best illustrates the handling of the company's most complex package.

Key elements in this packaging set-up are 62 hinged clamping jigs, which are cast from aluminum or brass to assure uniformity of size. With no empty spacing, these jigs fill two parallel tracks on the packaging machine. They are moved in a counter-clockwise direction by four rams, located at the corners of the machine, which push the jigs down the front loading track, across a deadplate to the "back stretch" or return track, from which they are pushed to the loading track again across a second deadplate. On the return track, the jigs are open for a single operator to place unfolded

New folder pack *costs Beltx 10% less than previous folding paperboard platform and provides sharper display and easy pegboard selection for consumers. Tightly stretched polyvinyl chloride film sandwiched and heat sealed between die-cut folder holds product firmly in place without vacuum drawing.*



Electronic sealer *(right) provides dielectric impulse through a reciprocating platen (A) to heat seal PVC film to card or paperboard folder packages. In next cycle, trip arms (B) open lids on two jigs at a time. Electronic sealing eliminates need for long cooling period.*



Rubber roller *(arrow) maintains constant tension on the long film web to insure a smooth package and automatically strips the completed packages from the jigs. Individual packages are later cut apart on a hot-wire unit.*

die-cut window cards in each jig, with the window side of the packages downward.

As the jigs are pushed, two at a time, across the deadplate to the loading track, they slide under the continuous strip of 2-mil PVC film which extends the entire length of the loading belt. Three operators on each line place the folded products on top of the film in each jig and manually close the hinged lids. This action automatically folds the card and sandwiches the product and film between the layers of paperboard.

The jigs then proceed to the electronic sealer, where a reciprocating platen clamps down on the jig; the heat seal is accomplished in 3 sec. by an electronic impulse supplied by a 1 kw. generator. At the next station, cam arms attached to the sealing platen trip open the jig lids, two at a time. The instantaneous seal, which needs virtually no cooling time, prevents packages from springing apart under pressure of their contents.

An intermittent-motion rubber roller, mounted above the level of the jigs, pulls the continuous strip of skin-type packages from the jigs and pushes them into a storage container at the rate of 12 packages per minute. The film feed at the beginning of the line maintains a constant tension on the plastic web. This tension stretches the film, making a smooth package and forcing the film to adhere closely to the product. Tension on the film is adjusted for products of different thickness by varying the clamping pressure of the jigs.

Two operators, alternating between the packaging lines, inspect the strips of packages, cut them apart on a hot-wire unit and finally stack the packages into cartons, ready for shipment.

Card package

Contrasted to the folder-pack lines, the card-package lines employ slightly different mechanical and loading action. Here, a web of 3-mil PVC film is stretched across the empty jigs in the loading track and both product and the single card are added consecutively. Since dielectric heating is accomplished with cold dies and is the result of molecular friction in the work load, the use of a buffer sheet of plastic-impregnated cloth surfacing each of the 86 jigs of the card-package machine, positioned between the jig and the vinyl being sealed, prevents loss of heat in the metal die. The heating action is further enhanced [*Continued on page 186*]

SUPPLIES AND SERVICES: Skin-type packaging machine by Beltx Corp., St. Louis 1. Polyvinyl chloride film by Clopay Corp., Cincinnati 14. Electronic sealer by Thermatron Co., Div. of Willcox & Gibbs Sewing Machine Co., 214 W. 39 St., New York. Cards coated by Valley Coating & Packaging Co., St. Louis 3.

F. N. Burt Company, Inc. Manufacturers of Small Set-up Boxes, Folding Cartons, Transparent Containers. 2345 Walden Ave., Buffalo 5, N.Y.
Offices in Principal Cities or Write Direct. Canadian Div.: Dominion Paper Box Co., Ltd., 250 Islington Ave. S., Toronto 18, Canada

Cushman Baking Company, Portland, Maine, wraps both its New England and Home Type bread in printed polyethylene film; reports increase in sales, decrease in stales! New polyethylene wrapper keeps bread feeling fresher longer, is easier for housewife to open and close.

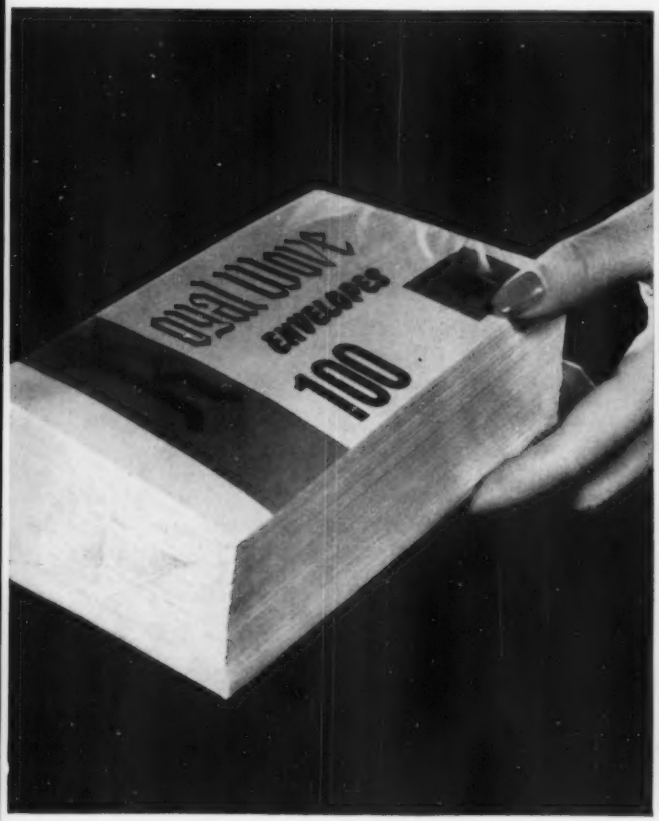
Sutherland Paper Company, Kalamazoo, Mich., found that using polyethylene film for overwrapping its paper plates eliminated cracking, shrinking and puncturing of the package—in storage, shipping, and handling. Results: Customer complaints dwindled and Sutherland can now maintain a sufficient inventory to meet demands of rush seasons.

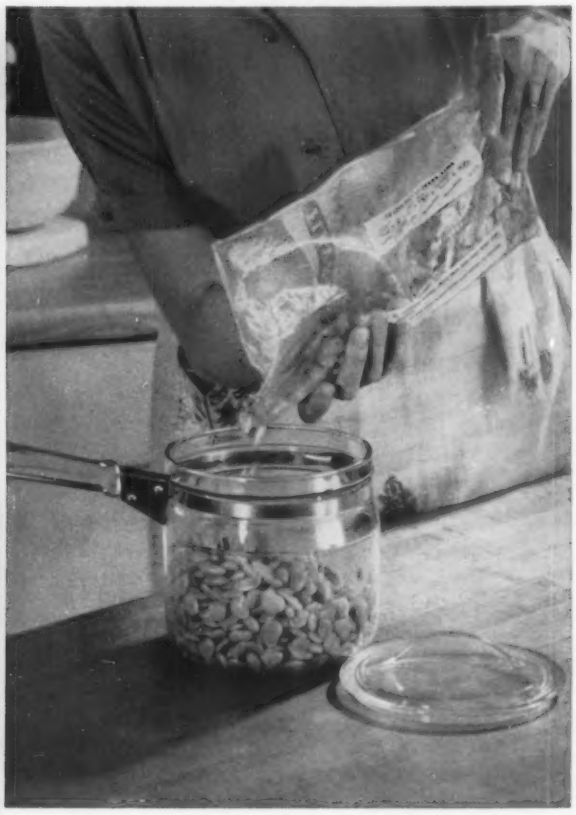
NO TWO SHAPES ALIKE...

Yet every product is packaged

Royal Wove Envelope Company, Los Angeles, Calif., was able to cut costs substantially when it switched to polyethylene film for automatic wrapping of envelopes. Packaging expenses were lowered. Breakage was sharply reduced. Returns stopped. Reorders increased.

Hottest new sales builder in food packaging is IQF—Individually Quick Frozen food packaged in polyethylene. Flav-R-Pac brand corn, peas, beans, are individually frozen and packaged in large 2-lb. polyethylene bags, colorfully printed. Housewife pours out amount she wants; puts remainder back in freezer.





automatically in polyethylene!

How Does Your Product Shape Up When It Comes to Packaging?
Irregular shapes, soft goods, flexible or rigid products . . . all can be automatically packaged in sparkling clear polyethylene film. And new high-speed machine developments make it even more economically attractive.

Protection and Sales Appeal . . . and the Lowest Price for Any Transparent Film
Polyethylene film advantages only begin in its low cost! With this economy comes protection because tough, flexible polyethylene is tear-resistant . . . stands up to counter display . . . protects while it shows your merchandise off to its best advantage.

Ask the Experts
Leading automatic packaging machine manufacturers will be glad to bring you up to date on their new equipment using film made of BAKELITE Polyethylene. Or contact Dept. BD-53M Union Carbide Plastics Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, New York, for the special packaging booklet that gives you facts and figures on this low cost film. In Canada, address Carbide Chemicals Company, Division of Union Carbide Canada Limited, Toronto 7.

UNION CARBIDE

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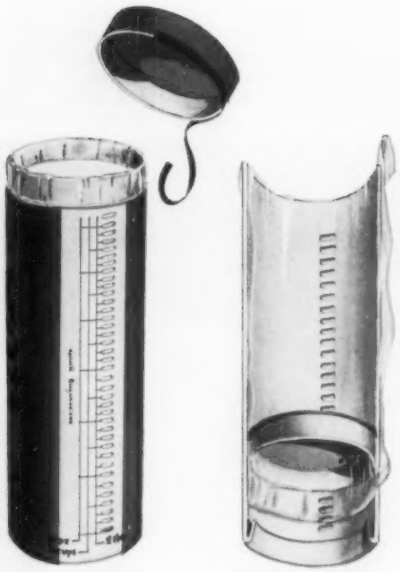
GOURMET FOOD CARRIER . . . styled to give quality look, new appetite appeal to carry-out orders of Chinese food, pizza, other "house specialties."



BAKING SHORTENING DISPENSER "Push-out" tube accurately, automatically measures standard amounts for home recipes . . . a new "specialty" for shortening makers.

LOOKING FOR NEW PACKAGING IDEAS? HERE ARE FOUR YOU CAN USE NOW!

CAT CAFÉ . . . premeasured servings in convenient serve-and-throw-away containers; sells more per unit purchase.

SERVE-AS-PACKED CARTONS Decorative, come-to-the-table servings of ice cream, sherbet. Ends "hard digging" to serve . . . plus no dessert dishes to wash.

TAKE YOUR PICK! To pep up sales or build brand preference. Give customers that "extra touch." These four new package designs can be made from available stocks of low-cost, liquid-resistant paper or paperboard. If you're interested in one or more of them, see your regular paper products supplier. He can obtain the liquid-resistant paperboard from leading paper mills who size their stock with Monsanto **MERSIZE.®**

WORKING ON YOUR OWN NEW PACKAGING IDEA? Don't overlook liquid-resistant paper and paperboard. For further details on the above paperboard applications, request a copy of **DESIGN GUIDE FOR NEW PAPER PRODUCTS.** Write on your company letterhead to:

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New data on film heat seals

A new laboratory sealer with a number of controllable variables for impulse- and constant-heat sealing is employed for determination on PVC film. *By Rolf Bosvik**

The literature concerning the testing of heat-seal strength of plastic films used for food packaging is very meager. Knight and Funk (1)[1] have determined the influence of time, temperature and pressure on the heat-seal properties of polyethylene. They found that good seals could be obtained even with relatively large changes in these factors. Kunze (2) describes a method for determining the heat-seal strength of cellophane. The seal becomes stronger with increasing pressure and temperature up to a certain optimum temperature, after which there is a slight decrease in the strength of the seal. The Packaging Institute (3) has given certain norms according to which the Institute tests the heat-seal strength of plastic films. The machine used is a commercial heat sealer and the tensile strength is measured in an instrument which indicates the highest value. Ryan (4) describes different machines for the heat sealing of polyethylene and Schricker (5) describes work on determining heat-seal strength. He has also determined the temperature in different points of the sealing element. Olsson and Pihl (6) have constructed a combined heat sealer and tester in which a plastic bag is blown up by compressed air and the bursting pressure is read on a manometer. They seek to express the strength of the bag and of the seal by three different figures. Ninnemann (7) has constructed a heat-seal machine whose temperature, time and sealing pressure may be varied independently of each other. Measurements on cellophane and polyethylene have been made with this machine. With increasing pressure the heat-seal

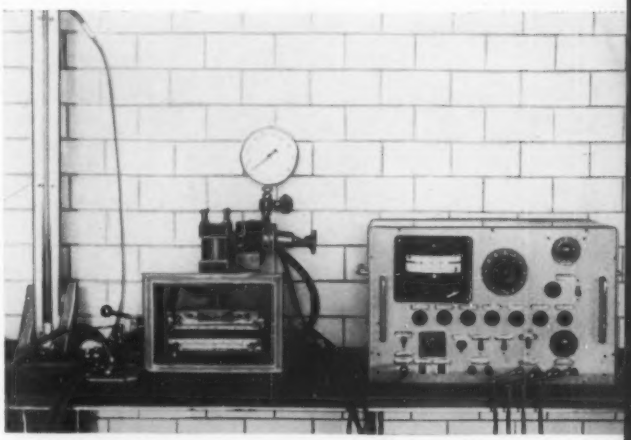


Figure 1. *The laboratory heat sealer.*

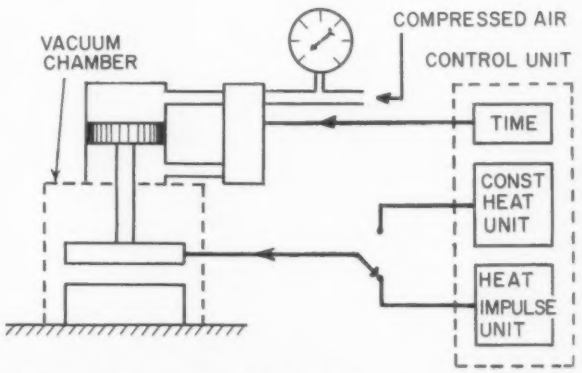


Figure 2. *Block diagram of the heat sealer.*

*Swedish Institute for Food Preservation Research (SIK), Gothenburg, Sweden.

[1]Numbers in parentheses identify References appended.

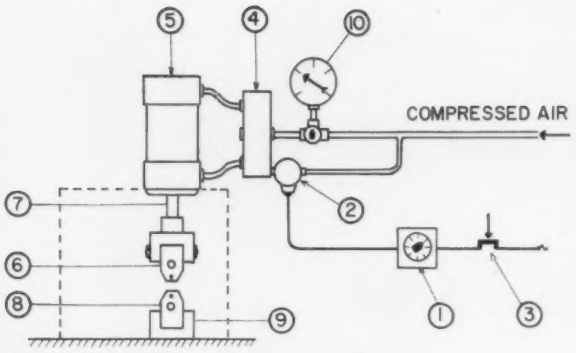


Figure 3. *Control of pressure and dwell time.*

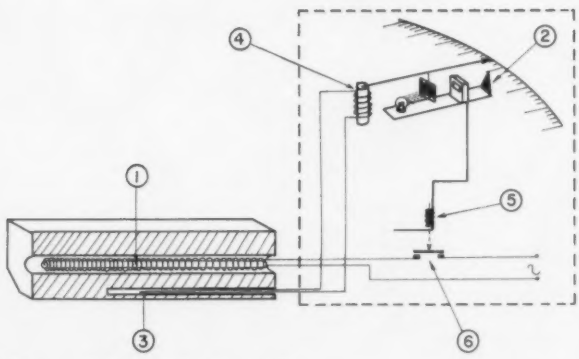


Figure 4. *Constant-heat controller.*

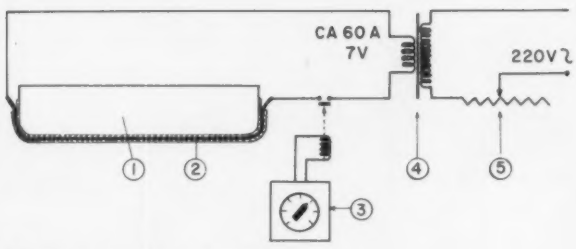


Figure 5. *Impulse-heat controller.*

Table I: Tensile strength in kg./34.5 mm.; sealing pressure 1 kg./cm.²

Sealing time in seconds	*Sealing temperature, deg. C.*								
	190	*193.5*	*197*	*200*	*205*	*210*	*215*	*220*	*225*
0.25	0.24	0.26	0.29	0.37	0.41	1.17	2.51	2.85	3.75
0.50	0.36	0.39	0.57	1.14	1.90	3.01	3.11	3.38	3.86
0.75	0.62	0.89	1.50	2.38	3.08	3.14	3.63	3.54	2.99
1.00	1.08	1.52	2.14	3.38	2.89	3.17	2.90	2.58	2.44
1.25	1.60	2.44	2.93	3.04	3.11	3.95	3.51	2.49	2.70
2.00			3.21		4.23		4.21		3.58

strength increases to a maximum, then decreases slowly. The same situation is true also when increasing the temperature.

At SIK we have for a long time been interested in studying the factors influencing the heat-seal strength of plastic films used for the packaging of foods. For this purpose a machine was needed by which sealing temperature, dwell time and sealing pressure might be accurately regulated. One should also be able to change between impulse-type jaws and constant-heat-type jaws. After a search at well-known manufacturers for heat-sealing machines, we found no commercial make to satisfy our demands; hence, we decided to build in our own workshop a special laboratory heat sealer with all the mentioned variables incorporated.

The machine has a very large number of possible combinations. The pressure may be varied between 0 and 6 kg./cm.², the dwell time of the jaws between 0 and 6 sec. and the impulse time between 0 and 2.5 sec. The jaws are interchangeable, so that the two different types of heat sealing may be studied. The jaws are mounted in a chamber which may be evacuated, thus permitting even gas or vacuum packaging. The machine is built in two main parts, one consisting of the vacuum chamber, the compressed-air cylinder with pressure regulator and jaws, and the other part of the machine containing all electrical circuits (Figures 1 and 2).

Pressure and dwell

Pressure on the jaws is obtained by use of compressed air (Figure 3) which may be varied between 0 and 6 kg./cm.² with an accuracy of 50 gm./cm.². The compressed-air technique has the advantage of being easy to build using standard parts (type Mar-

Table II: Tensile strength in kg./34.5 mm.; sealing pressure 2 kg./cm.²

Sealing time in seconds	*Sealing temperature, deg. C.*				
	193.5	*200*	*210*	*220*	*225*
0.25	0.18	0.29	0.44	1.30	2.24
0.75	0.46	1.21	2.74	4.50	4.41
1.25	1.00	3.24	4.40	4.63	4.44

Table III: Tensile strength in kg./34.5 mm.; sealing pressure 3 kg./cm.²

Sealing time in seconds	*Sealing temperature, deg. C.*				
	193.5	*200*	*210*	*220*	*225*
0.25	0.21	0.35	0.61	1.19	2.47
0.75	0.49	1.11	3.10	3.87	4.39
1.25	0.99	2.32	4.00	4.20	4.33

Conversion factors

1 kg./cm.^{2} = 14.22 lbs./sq. in.
1 millimeter (mm.) = 0.0394 in.
1 kilogram = 2.2 lbs.

ton); it is easy to regulate and the velocity of the piston is high. An electronic timer, 1, which is adjustable between 0 and 6 sec., opens a solenoid valve, 2, as soon as the contact, 3, is closed. The solenoid valve opens up for the compressed air which passes through the guiding valve, 4, and into the main cylinder, 5. The upper jaw, 6, is mounted on this piston rod, 7, and therefore will be pressed against the lower jaw, 8, which rests on a firm support. The sealing pressure is adjusted by means of a reducing valve on the manometer, 10. The striated line in the figure indicates the contours of the vacuum chamber. As shown, only the jaws are situated inside the chamber. Vacuum-tight connections for heating elements and thermocouples are located on one of the chamber walls.

Constant-heat sealing

By constant-heat sealing, more commonly called just heat sealing, we mean the type of sealing involving the use of jaws made of heavy heat-resistant material with built-in heating elements. By regulating the energy supply, one may obtain a certain desired constant temperature at the sealing surface. The adjustment of temperature may be effected either by means of an energy regulator or with temperature-sensing elements (contact thermometer, thermocouples, etc.) which activate relays previously set at the desired temperature. The jaws must be made of heat-resistant steel, because common sealing temperatures lie between 125 and 250 deg. C. If temperature-sensing elements are used, the thermometer bulb or the thermocouple junction must be as near the sealing surface as possible, because the heat loss from the jaws may be very high.

The sealing surface often has to be covered with some non-sticking material, such as Teflon web. One of the jaws is often made of, or covered with, hard rubber or similar material to distribute the pressure evenly and as an aid in smoothing out the plastic film in the sealing area.

The advantage of constant-heat sealing is that one

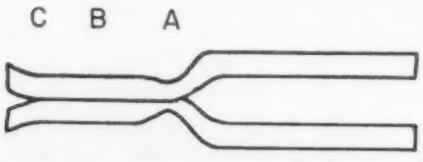


Figure 6. *Types of rupture of the seal.*

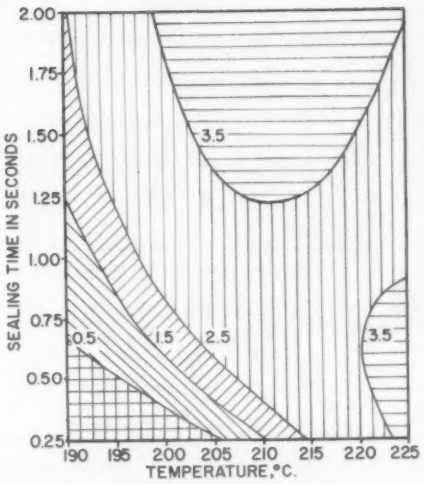


Figure 7. *Tensile strength as a function of time and temperature at 1 kg./cm.^{2} sealing pressure (impulse-heat sealing).*

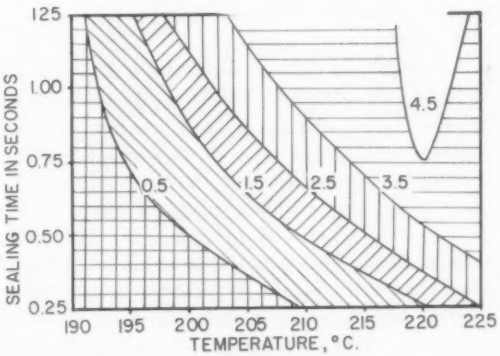


Figure 8. *Tensile strength as a function of time and temperature at 2 kg./cm.^{2} sealing pressure (impulse-heat sealing).*

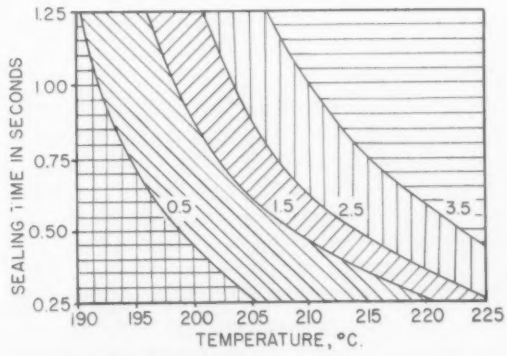


Figure 9. *Tensile strength as a function of time and temperature at 3 kg./cm.^{2} sealing pressure (impulse-heat sealing).*

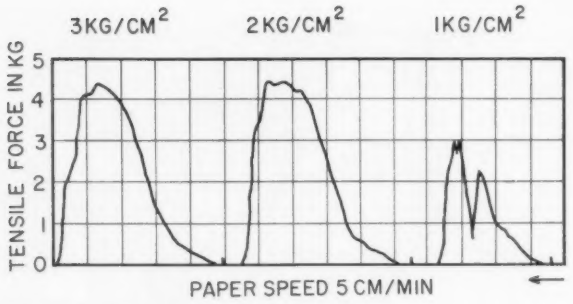


Figure 10. *Typical tensile-strength curves for polyvinyl chloride film (scale 1:2).*

may—especially when using temperature-sensing elements—obtain very close control and indication of the temperature. The disadvantages are that the whole jaw gets hot and therefore gives off much heat to the surroundings and, consequently, also to the foods to be packaged, and that it also takes a certain time for the jaws to reach the desired temperature.

In Figure 4 is shown a sketch of the mechanism of the constant-heat equipment in our laboratory heat sealer. The jaw is heated by a 250-watt element, 1. The desired temperature is set with the pointer, 2, on which a photocell and a lamp are mounted. A thermocouple, 3, is situated near the sealing surface and converts the temperature variations to voltage variations which are sensed by the galvanometer, 4. On the galvanometer pointer an opaque flag is mounted, which moves in or out of the light beam from the lamp as the pointer moves up or down the scale. A photocell then activates a relay, 5, which operates the contact, 6, through which the electrical current to the heating elements flows. Two thermistors (not drawn in the figure) act as a proportionating device, thus assuring a minimum of temperature fluctuations. The temperature regulator is a West instrument, Type JP, Gardsman.

The jaws have plain, 200-by-10-mm. sealing areas, which are covered with Teflon. Around the lock nut of the main cylinder and through a hole in the piston rod, water is circulated in a copper tube to prevent heat transfer to the cylinder, whose maximum working temperature is +60 deg. C. With the upper jaw heated to +300 deg. C., a temperature of +42 deg. C. was measured in the piston rod, which is well within permissible limits.

Impulse-heat sealing

By impulse-heat sealing we mean sending a high current for a short time through a resistance wire mounted on the jaws. The current heats the wire to the desired temperature in an instant. The wire which is formed like a ribbon, 5 mm. wide and 200 mm. long, acts as the sealing surface. In this type of sealing operation one needs two timers, one for the time the jaws are pressed together (dwell time) and one for the impulse cycle (heating or sealing time). The most common procedure is to let the dwell time be just a little longer than the heating time, so as to obtain a certain cooling period, to allow the film to solidify under pressure to prevent deformation of the film.

The energy needed to heat the resistance wire is supplied from a transformer and is regulated by means of a rheostat. In commercial machines it is often necessary to cool the jaws by circulating water, to prevent excess heating. In impulse-heat sealing one may have resistance wires on both upper

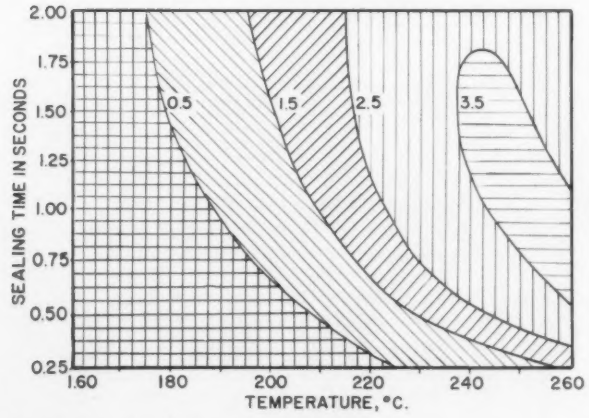


Figure 11. *Tensile strength as a function of time and temperature at 1 kg./cm.² sealing pressure (constant-heat sealing).*

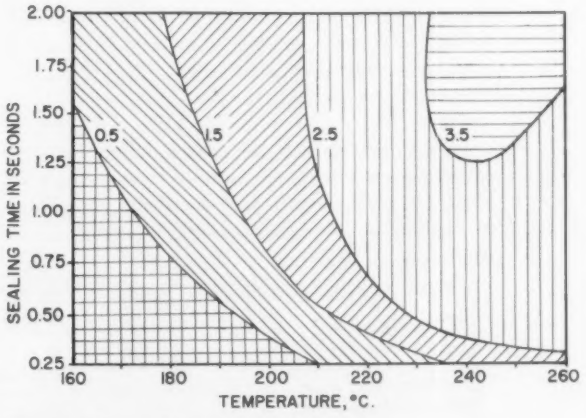


Figure 12. *Tensile strength as a function of time and temperature at 3 kg./cm.² sealing pressure (constant-heat sealing).*

and lower jaws, thus being able to seal thicker films than it is possible to achieve with the use of constant-heat-sealing equipment.

The advantages of impulse sealing are that the jaws do not get particularly hot; therefore they do not influence the surroundings, no pre-heating time is necessary, the jaws may be lighter and one may seal a greater variety of films than by the constant-heat method. A disadvantage is that the more complicated electrical units required (timers, etc.) often command a higher price.

Figure 5 shows the electrical circuits of the impulse-sealing unit in our machine. On the jaw, 1, is mounted a 5-mm.-wide resistance wire, 2, which is isolated from the metal jaw by a Teflon layer. Even the outside of the wire is covered with Teflon to prevent sticking of the plastic films. Through the wire flows for a short time—determined by the timer, 3,—a maximum current of 60 amperes at 7 volts, supplied by the transformer, 4. A rheostat, 5, connected in series with the transformer primary, regulates the effect to the resistance wire and hence the temperature. The jaws have no extra cooling device. The temperature on the sealing surface has been measured by means of melting crystals using a heating time of 2.5 sec., equal to the maximum obtainable time of the machine.

A German PVC film, called Genotherm HS-13, from Kalle & Co. was used throughout the work. The thickness was on the average 0.04 mm. and the width of the film strips used was 34.5 mm. Every measurement was performed on 10 parallels. The tensile strength of the seal was measured by an Instron, Type TT-B. On this instrument the continuous observations of the forces acting on the film were recorded as functions of time, this giving abundant information on the quality of the seal.

Three different sealing pressures were used, namely 1, 2 and 3 kg./cm.^{2}. The tensile strengths of the seals in kg./34.5-mm. width are presented in Tables I to III. During the measurements, different types of rupture in the seals were observed, which might be placed roughly in three main groups (see Figure 6). When sealing at higher temperatures, the film melts partly and starts to flow out at A. At this point, therefore, the film becomes thinner and, by stretching, it will break at just this point. At lower temperatures (and pressures) the film does not flow out, the thickness undergoes no change and therefore the rupture will be somewhere in the welding seam, B. If, however, the temperature is too low, one can pull the two film strips completely apart, thus having an unsatisfactory seal of the film (indicated by C in the figure).

The best seal for practical purposes is obtained when the fractures appear at B (in the middle of the seam). During the tensile-strength measurements, the highest values were often observed when the fracture appeared at A, but this does not therefore represent a high seal quality. Because the film here is thinner, other factors must be remembered in judging the quality of the seal; for instance, a thinner film has greater likelihood for formation of pores whose existence might allow yeasts and bacteria to penetrate; also the gas permeability increases with decreasing thickness, which is most undesirable for vacuum packaging. With laminated materials, the lamination often cracks just at A, which is possibly due to too high temperature and consequent thinning of the film during heat sealing.

Tables IV-VI show the position of break with codes as in Figure 6. On correlating the tensile strength with type of break, one finds that the best seal, according to the discussion above, lies in the range 1.5—3.5 kg. tensile force. Below 1 kg. the film strips easily come apart on pulling by hand, this obviously not being an acceptable seal. At 3 kg., the film starts to crack at A, which is undesirable from the packer's view. In this connection, it might be mentioned that the tensile strength of the

Table IV: Type of fracture at 1 kg./cm.^{2} sealing pressure

Sealing time in seconds	*Sealing temperature, deg. C.*								
	190	*193.5*	*197*	*200*	*205*	*210*	*215*	*220*	*225*
0.25	C	C	C	C	C	C	BC	B	B
0.50	C	C	C	C	C	B	A	BC	A
0.75	C	C	C	B	BA	A	A	BA	A
1.00	C	C	BC	BA	A	A	A	A	A
1.25	C	B	B	A	A	A	A	A	A
2.00			A		B		A		A

Table V: Type of fracture at 2 kg./cm.^{2} sealing pressure

Sealing time in seconds	*Sealing temperature, deg. C.*				
	193.5	*200*	*210*	*220*	*225*
0.25	C	C	C	C	BC
0.75	C	C	BC	BA	A
1.25	C	BC	B	A	A

Table VI: Type of fracture at 3 kg./cm.^{2} sealing pressure

Sealing time in seconds	*Sealing temperature, deg. C.*				
	193.5	*200*	*210*	*220*	*225*
0.25	C	C	C	C	BC
0.75	C	C	BC	BC	A
1.25	C	BC	BA	A	A

Table VII: Tensile strength in kg./34.5 mm.; sealing pressure 1 kg./cm.²

Sealing time in seconds	*Sealing temperature, deg. C.*											
	161.5	*170*	*179.5*	*188*	*197*	*206*	*215*	*224*	*233*	*241*	*250*	*259*
0.25						0.22	0.31	0.49	0.84	1.23	1.24	1.62
0.50					0.49	0.44	0.86	1.47	1.70	2.46	3.13	3.36
0.75				0.42	0.48	0.87	1.36	2.17	2.69	3.27	3.52	3.57
1.00			0.46	0.71	1.02	1.49	2.14	2.56	3.02	3. 27	3.61	3.20
1.25		0.36	0.45	0.65	0.87	1.57	2.02	2.91	3.03	3.70	3.61	3.28
2.00	0.28	0.35	0.67	0.80	1.73	2.39	2.50	3.18	3.23	3.46	3.26	3.03

Table VIII: Tensile strength in kg./34.5 mm.; sealing pressure 3 kg./cm.²

Sealing time in seconds	*Sealing temperature, deg. C.*													
	170	*180*	*190*	*200*	*210*	*220*	*230*	*240*	*250*	*260*	*270*	*280*	*290*	*300*
0.25	0.14	0.18	0.25	0.26	0.25	0.23	0.39	0.32	0.88	1.28	1.16	1.95	2.05	2.30
0.50	0.20	0.20	0.26	0.33	0.33	0.52	0.88	1.07	1.84	2.83	2.65	3.50	3.50	3.35
0.75	0.25	0.25	0.29	0.35	0.54	0.85	1.43	1.55	2.48	3.32	3.20	3.50	3.13	3.25
1.00	0.30	0.29	0.44	0.41	0.84	1.35	1.94	2.03	2.65	3.35	3.00	2.93	3.00	3.23
1.25	0.29	0.31	0.44	0.70	1.15	1.47	2.35	2.21	2.92	3.45	3.30	3.50	3.35	3.40
2.00	0.32	0.48	0.66	1.14	1.69	2.14	2.78	2.57	3.28	3.45	3.50	3.40	3.75	3.60

Table IX: Type of fracture at 1 kg./cm.² sealing pressure

Sealing time in seconds	*Sealing temperature, deg. C.*											
	161.5	*170*	*179.5*	*188*	*197*	*206*	*215*	*224*	*233*	*241*	*250*	*259*
0.25						C	C	C	C	C	C	C
0.50					C	C	C	C	C	BC	BC	BC
0.75				C	C	C	C	C	BC	BC	AB	A
1.00			C	C	C	C	C	BC	A	A(B)	A	A
1.25		C	C	C	C	C	C	BC	BC	AB	A	A
2.00	C	C	C	C	C	C	BC	A	A	A	A	A

Table X: Type of fracture at 3 kg./cm.² sealing pressure

Sealing time in seconds	*Sealing temperature, deg. C.*													
	170	*180*	*190*	*200*	*210*	*220*	*230*	*240*	*250*	*260*	*270*	*280*	*290*	*300*
0.25	C	C	C	C	C	C	C	C	C	C	C	BC	BC	BC
0.50	C	C	C	C	C	C	C	C	BC	BC	BC	A	A	A
0.75	C	C	C	C	C	C	BC	AB	A	A	A	A	A	A
1.00	C	C	C	C	C	BC	AB	BA	A	A	A	A	A	A
1.25	C	C	C	C	CB	B	B	B	A	A	A	A	A	A
2.00	C	C	C	BC	A	A	A	A	A	A	A	A	A	A

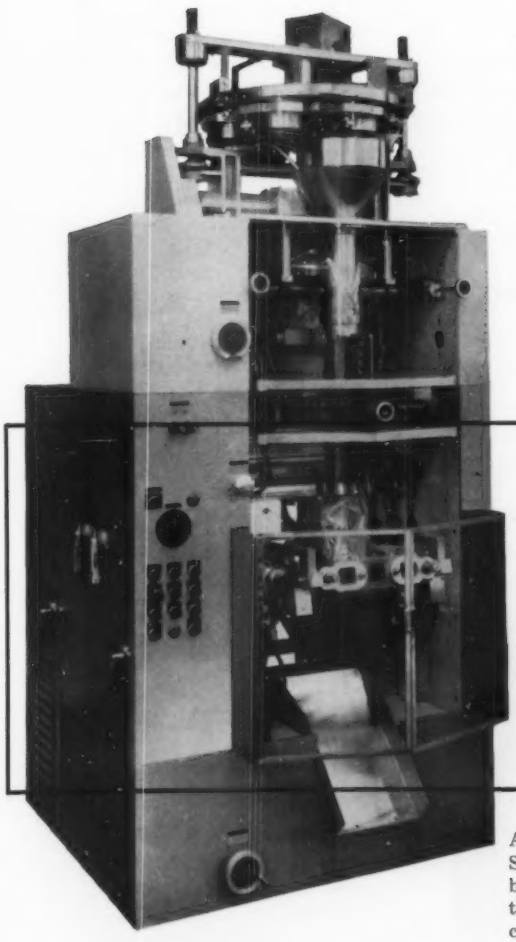
film itself (same width and length as the test strips) is 6.36 kg., which is much more than the strength of the best heat seals.

Figures 7-9 illustrate the different parameter ranges in which the same tensile force is needed to pull the sealed film strips apart. The figures are drawn as topographical maps with tensile force in kg. per 34.5-mm. width of film strip as contours. It is obvious from the figures that an increase in the sealing pressure causes a narrowing of the best sealing range. This means that increasing the pressure requires a closer control of time and temperature. The measured forces at low sealing pressures follow very irregular curves. Even at around 1 kg./cm.² the boundaries are ill-defined, although in some instances good seals might be obtained.

In Figure 10 representative curves for the tensile strength taken from the Instron record are shown. The effect of three different sealing pressures, 1, 2 and 3 kg./cm.², on the seal is clearly demonstrated. The same time and temperature (0.75 sec. and 225 deg. C.) have been used at the different pressures. At 1 kg./cm.² the structure of the Teflon web covering the jaws is clearly indicated by the numerous peaks. At 2 kg./cm.² the web structure has almost vanished; at 3 kg./cm.² [*Continued on page 184*]

10 BIG REASONS

why the Transwrap S-750 gives you more for your Packaging dollar!



- **Up to 75 bags a minute.** Convenient handwheel regulates speed from 25 to 75 bags per minute.
- **Modern push-button controls.** Centralized controls provide utmost convenience, simplified operation.
- **Wide size range.** Forms bags 3″ to 15″ long, 2″ to 8½″ wide. Bag change-over time reduced to less than 15 minutes.
- **No oiling of drive unit.** Sealed ball and roller bearings in central drive unit require *no lubrication*.
- **⅛" Impulse sealing.** Save on material with the new, improved impulse end seal. Wire cut-off makes clean, consistent ⅛″ end seals.
- **Fully-protected electrical controls.** Dust and waterproof panel houses all electrical controls, makes cleaning easier and faster, reduces maintenance.

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- **Completely new modern design.** Styled by Peter Muller-Munk Associates, foremost industrial designers.
- **Fastest drawbar action.** New linear, crank-operated drawbar, spring counterbalanced for longer life, speeds bag forming.
- **New paper feed.** Unique pre-feed roll arrangement eliminates drawbar pull and film stretching.
- **New plug-in end seal assembly.** The only machine to offer fast, easy change-over of sealing mechanism for different types of film.

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Fluorination of polyethylene

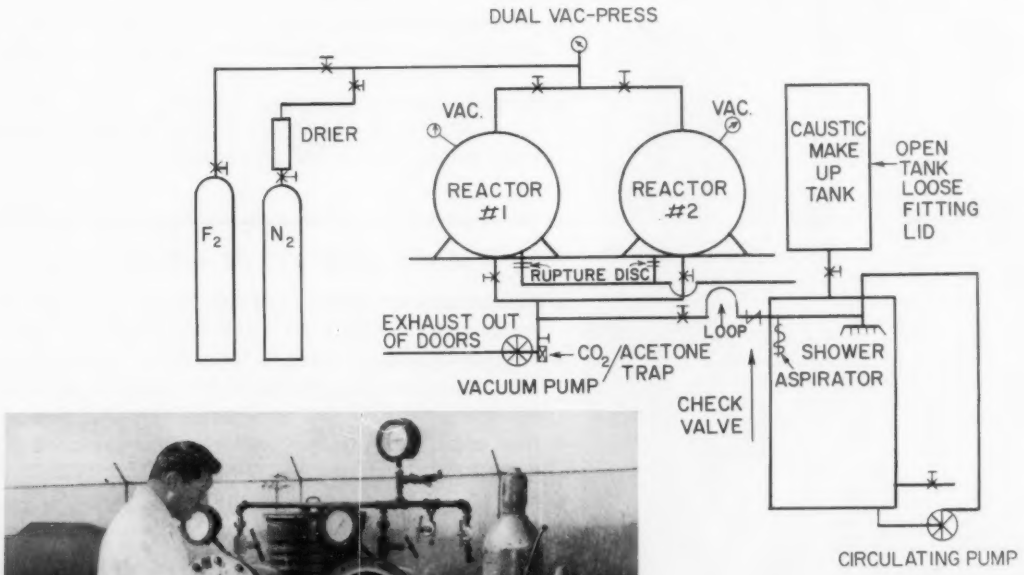
Preliminary report indicates possibilities of the process in reducing permeabilty of molded bottles, with results approaching that of the best liner barriers. *By Jules Pinsky, A. Adakonis and A. R. Nielsen**

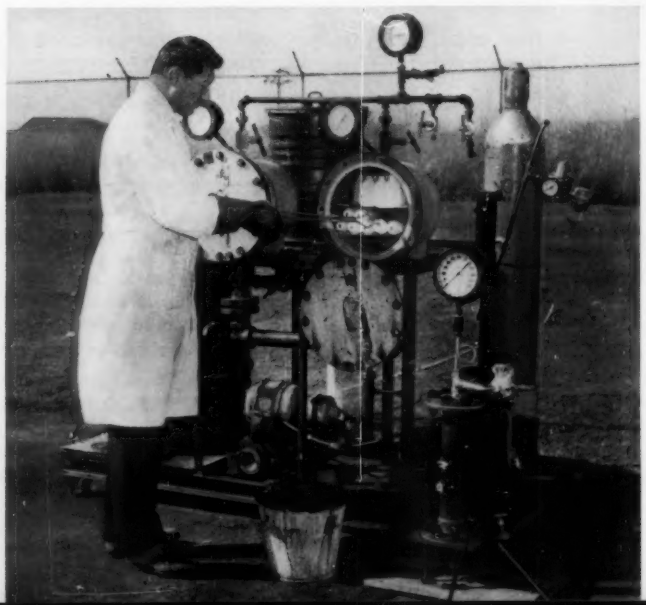
Almost from the day that the first plastic bottle was blow molded, there has been a driving effort to improve permeability. With polyethylene there have been copolymers, mixtures, radiation grafting and cross linking, treatment, coating and lining.

One of the latest directions has been the fluorination of polyethylene. This is a logical development since polytetrafluoroethylene (Teflon) is the most chemically resistant and the least permeable of the commercially available thermoplastic materials.

* Of the Research Staff of Plax Corp., Hartford, Conn.

Unfortunately, the polymerization of polytetrafluoroethylene produces low yields and a consequent high consumer price. The price, plus the necessity of using special sintering techniques in production of sheets, shapes or containers from it, has resulted in a limited market for packaging purposes. A copolymer of polytetrafluoroethylene with better processing properties has recently been offered commercially, but the cost of the molding powder is still high and thus not within the practical realm for most applications. Therefore, a fluorinated polyethylene,





Fluorination apparatus *is shown in photographic and diagrammatic views.*

Table I: Permeability data 28-day test of fluorinated, lined and stock 4-oz. Boston round bottles

Permeants	*Bottle type*	*Temp. deg. F.*	*Weight change 24 hrs.*	*365-day estimated weight change* gms.	%	*Condition of bottle*	*Condition of product*
Water	Control	73	0.0003	0.1248	0.11	No change	No change
	Lined	73	0.0007	0.2639	0.22	No change	No change
	Fluorinated	73	0.0004	0.1495	0.13	No change	No change
	Control	120	0.0160	5.841	4.9	No change	No change
	Lined	120	0.0171	6.226	5.3	No change	No change
	Fluorinated	120	0.0165	5.999	5.2	No change	No change
Methyl alcohol	Control	73	0.0070	2.548	2.9	No change	No change
	Lined	73	0.0075	2.733	3.0	No change	No change
	Fluorinated	73	0.0074	2.681	3.0	No change	No change
	Control	120	0.0989	36.01	38.8	Bottle bulged	No change
	Lined	120	0.1063	38.68	42.6	Sl. bulge	No change
	Fluorinated	120	0.1013	36.87	42.1	Sl. bulge	No change
Ethyl acetate	Control	73	0.1462	53.21	51.1	No change	Sl. discolored white precipitate in bottle
	Lined	73	0.0038	1.368	1.3	No change	No change
	Fluorinated	73	0.1470	52.09	51.3	No change	No change
	Control	120	1.764	641.9	626.0	No change	Sl. discolored white precipitate in bottle
	Lined	120	0.6546	205.5	206.0	No change	No change
	Fluorinated	120	1.883	685.3	677.0	No change	No change
Methyl ethyl ketone	Control	73	0.0913	32.97	35.0	No change	No change
	Lined	73	0.0030	1.105	1.1	V. sl. collapse	No change
	Fluorinated	73	0.0983	37.77	39.0	V. sl. collapse	No change
	Control	120	1.195	435.0	463.0	Collapsed	White precipitate in bottle
	Lined	120	0.804	292.6	309.0	No change	Yellowed slightly
	Fluorinated	120	1.331	484.5	510.0	No change	No change
n-di-butyl ether	Control	73	0.5954	216.7	236.0	Sev. collapsed	Sl. discolored
	Lined	73	0.0032	1.157	1.2	No change	No change
	Fluorinated	73	0.0158	5.739	6.5	Collapsed	No change
	Control	120	2.798	1019.0	1113.0	Sev. collapsed	Empty
	Lined	120	0.0834	30.37	33.3	Collapsed	No change
	Fluorinated	120	0.1388	50.51	57.4	Collapsed	No change
Hexane	Control	73	2.428	883.6	1104.0	Sev. collapsed	No change
	Lined	73	0.0395	14.36	18.2	No change	No change
	Fluorinated	73	0.0743	27.04	34.5	No change	No change
	Control	120	empty in one week			Sev. collapsed	Empty
	Lined	120	0.393	143.3	184.0	No change	No change
	Fluorinated	120	0.5193	189.0	241.0	No change	No change
Toluene	Control	73	3.083	1122.0	1128.0	Sev. collapsed	Discolored
	Lined	73	0.0769	27.98	27.8	No change	No change
	Fluorinated	73	0.0919	33.45	34.0	No change	No change
	Control	120	empty in one week			Sev. collapsed	Empty
	Lined	120	0.2453	89.30	87.8	No change	No change
	Fluorinated	120	0.4438	161.5	166.0	No change	No change
Carbon tetra-chloride	Control	73	3.952	1439.0	839.0	Sev. collapsed	No change
	Lined	73	0.0730	26.58	15.6	No change	No change
	Fluorinated	73	0.1359	49.47	29.9	No change	No change
	Control	120	empty in one week			Sev. collapsed	Empty
	Lined	120	0.4345	158.2	93.3	No change	No change
	Fluorinated	120	0.7868	286.4	173.0	No change	No change
Mineral oil	Control	73	+0.0006	+0.2041	+0.20	Sl. collapse	No change
	Lined	73	+0.0004	+0.1508	+0.15	No change	No change
	Fluorinated	73	+0.0006	+0.2041	+0.20	No change	No change
	Control	120	−0.1710	−6.224	−6.0	Collapsed, outer surface very greasy	Discolored
	Lined	120	−0.0027	−0.9828	−0.97	No change	No change
	Fluorinated	120	−0.0025	−0.8931	−0.87	No change	No change
Allyl caproate	Control	73	0.0938	34.14	35.5	Collapsed	No change
	Lined	73	0.0009	0.3198	0.32	Sl. collapse	No change
	Fluorinated	73	0.0011	0.4108	0.41	Collapsed	No change
	Control	120	1.2848	467.7	507.0	Sev. collapsed	No change
	Lined	120	0.0188	6.854	6.8	Sl. collapse	Sl. odor change
	Fluorinated	120	0.0594	21.622	22.0	Collapsed	No change

Table II: Results of 12-week storage of toothpaste

Bottles	*Wall thickness*	*Storage condition*	*Weight loss, %, average*	Organoleptic
1. Fluorinated polyethylene bottles	0.035 to 0.043 in.	Room temp.	0.16	Devoid of methyl salicylate. Not acceptable
2. Non-fluorinated polyethylene bottles (control)	0.028 to 0.043 in.	Room temp.	0.33	Devoid of methyl salicylate. Not acceptable
3. Regular lined bottles	0.030 to 0.045 in.	Room temp.	0.01	Best of group. Acceptable

where chemical and permeability resistance is provided by the surface molecules of a polyethylene film or container, appears to be a means of producing many of the desired properties of polytetrafluoroethylene, but at a considerably lower cost.

Such fluorination of a polyethylene surface was achieved by Stephen P. Joffre, manager, organic chemicals, Shulton, Inc. U. S. Patent 2,811,468 was issued to him on Oct. 29, 1957.

On issuance of this patent the research staff of Plax spent more than a year in study of fluorination as a means for reducing the permeability of polyethylene and other thermoplastics. On completion of this study, Plax Corp., in April of 1959, purchased from Shulton, Inc., of Clifton, N. J., the above listed patent and related worldwide patents for the fluorination of plastics.

Formation of a fluorinated surface was found to produce a considerable reduction in permeability. Exact identity of the new surface is difficult to substantiate, but it is believed to include monofluorides and difluorides. The precise fluorination level attained is difficult to establish. It is believed, however, that the net gain of a 0.020-in.-thick container wall is less than 0.01% by weight. The level at the outer surface is, of course, considerably greater. Initial estimates of fluorination extent were carried out by arc spectroscopy. These, however, did not seem to be sufficiently reliable.

The next step was to fluorinate a block of polyethylene and then shave off layers with a microtome. Sections approximately 0.002 in. thick were obtained and analysis for fluorine made by a wet chemical micro-technique. Similar layers were then examined by infra-red and a calibration curve for wet chemical versus infra-red measurements devised. By this technique it was demonstrated that virtually all of the fluorine was distributed in the outer 0.002 in. of a treated article. It is likely that most of the treatment occurs only in the outer surface molecules.

The infra-red technique used for measuring the degree of fluorination makes use of the absorbance of the C-F band at 8.1 microns.

The Shulton process treats the polyethylene by exposure in a closed reactor with elemental fluorine, diluted with dry air or nitrogen, for a period of about 30 minutes. Care must be exercised that the polyethylene bottle or sheet is free from oil, dirt, grease, lint or foreign particles; otherwise it is possible that ignition may develop.

In addition to chemical resistance, fluorination was found to produce a hydrophillic (ink receptive) surface. The mechanism is believed to be similar to other halogenation chlorination treatment, with the treatment being equivalent to chemical oxidation, electronic or flame treated.

There were no noticeable changes in physical properties, including tensile, light opacity, etc., except for heat sealability which became considerably more difficult. Articles, once they have been treated, seemed to retain their new properties (aging tests limited to a period of one year).

In addition to elemental fluorine, chlorine trifluoride was tried, since this chemical is much safer. Unfortunately, treatment equal to fluorine gas was not obtained. A recent announcement was made by Du Pont (Aug. 10, 1959) of the availability of sulfur tetrafluoride. This is described as a "reactive gas . . . with the unusual ability of replacing oxygen with fluorine in many chemical compounds." To our knowledge, it has not yet been proved whether this particular gas can replace the hydrogen in polyethylene with fluorine.

Of special interest to Plax, was, of course, the effect of fluorination on permeability.

On the whole, it was found that fluorination tended to approach the permeability barrier improvement of one of the most generally efficient of the Plax bottle liners (1, 2)[1] for non-polar—or low polarity—materials. For polar materials, no improvement was found, over the control bottles, with either fluorinated or lined bottles.

The permeation rate of non-polar liquids was markedly reduced with both fluorinated and lined bottles. A typical material that showed such reduction was allyl caproate. Consideration is being given to the use of this liquid as a control-test medium.

In the particular test described below, 4-oz. Boston round bottles were studied for comparative permeability: (a) controls, (b) fluorinated and (c) lined.

Three bottles of each type were tested at 73 deg. F. and 120 deg. F. Nine standard Plax permeability-test liquids—water, methyl alcohol, ethyl acetate, methyl ethyl ketone, n-di-butyl ether, hexane, toluene, carbon tetrachloride and mineral oil—along with the following commercial products: Dickinson Witch Hazel, Shulton Desert Flower, Shulton Old Spice Toilet Water and [*Continued on page 190*]

[1] Numbers in parentheses identify References appended.

THE WARNER BROTHERS COMPANY *Packaging Division 325 Lafayette St., Bridgeport 1, Connecticut* / *POSITIVE PACKAGING

Questions & Answers

This consultation service on technical and engineering packaging subjects is at your command. Simply address your questions to Technical Dept., Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Variations in WVT values

Q: *Many times the water-vapor transmission values of plastic films are stated as a range of values. Our laboratory has also made many such transmission tests and we find that the values for the same thickness and type of film will vary considerably. It would appear that a homogeneous plastic film made from a specified resin should have very consistent transmission values. Specifically, why do we find substantial variations between film made from the same grade of polyethylene resin?*

A: There are several reasons why homogeneous plastic films made from the same grade of resin by different film producers and by different processes will show variations in water-vapor transmission values.

It is assumed that you are making the water-vapor transmission tests by a standard method, that the test cabinet is properly designed and operated, and that the laboratory personnel are skillful and experienced. You can check these factors by always including in each test lot a sample of a film that has been carefully selected as a standard.

Even though you specify a given grade of resin and formulation, there will be some variations in the resin that are acceptable and within the commercial tolerances of the specifications. Such variations in the resin are generally small within the lots from a given maker and will be greater between different resin makers. These variations will also depend on how rigidly the specification is written. The effect of resin variations on the moistureproof values of the film will depend on the type of resin and, for polyethylene, this should not be a serious matter.

Another cause of variations in the moistureproof values will come from the surface characteristics and thickness control of the film. Films that have surface imperfections such as striations, or scratches and variations of thickness, will obviously show greater differences in moistureproofness than films that are more uniform in these respects.

The major cause of variance in water-vapor transmission values is due to the difference in the film-making process. If a given resin is made into film by a casting process, using solvents, as compared with the same resin made by extrusion, there can be great differences in values. In case of an extruded film, such as polyethylene, the rate of cooling and the degree of orientation can cause great differences in the moistureproofness. Also, the use of slip agents or other additives can have important effects.

In your case, the variations of WVTR values that have been noted from different makers of polyethylene film are unquestionably due to the fact that the various suppliers are using different techniques and equipment in producing the film.

Sealing speed for polyethylene

Q: *What is the fastest machine for heat sealing polyethylene film?*

A: It depends on the type of package. Until recently, standard overwrappers ran about 75 packages per minute. But the new aluminum heat-sealing bars treated with molybdenum disulfide have reportedly enabled one specialized wrapper for small packages to top 200 units per minute—a speed formerly reached only on bag machines. Pouch packers still form, fill and seal only about 75 packages per head, but as many as 10 heads can be efficiently coupled together for large volume.

Test for film strength

Q: *We notice that many reports on the properties of plastic films give Mullen test values. We use plastic films for several different package types and would like to write specifications for each film to be used with each package. Would the Mullen test be a useful measure of the strength of a plastic film bag?*

A: The Mullen test has been used for many years by the paper industry as a quick and useful test for controlling and specifying one of the important physical properties of paper and paperboard. This test measures the bursting strength of a material and is performed by a carefully described test method. Over the years, the paper industry has found that this burst or Mullen value is an index of paper performance for certain end uses. However, there is still considerable debate as to what this test means, since it does not measure or define a fundamental property as compared with a test for tensile, tear, stiffness or other basic, single property.

However, it is doubtful if the Mullen test has any meaning when applied to materials that have a higher value of stretch or elongation than does paper. Most plastic films have relatively high values of elongation compared with paper.

The Mullen tester has a flexible diaphragm which is hydraulically loaded at a controlled and prescribed, but rather slow, rate. This rate of applying pressure would allow a plastic film to stretch and some films cannot even be broken in the Mullen tester.

A better test for the burst strength of a plastic film is a drop or impact test. In such a test, the forces on the film sample are applied very rapidly, by a falling ball or swinging pendulum. Such a test method is described in the article, "New Pendulum Impact Tester," which appeared in Modern Packaging's Technical Section, Nov., 1956, p. 163.

A falling-ball or impact test would be a useful index for plastic films for bag use, but the standard Mullen test has no validity in this area.

BOSTITCH SHOWS COMPANY HOW TO SPEED PACKAGING 50%

New stapled package also credited with 30% sales jump

Hi-Fi has given the electronics industry a new market and, with it, some new problems. Packaging and merchandising have come to figure prominently in selling to hobbyists and even to repairmen.

A Bostitch Economy Man suggested that this company's line of components was ideal for stapled bubble packs. Components would be visible and yet would be protected from air and dirt. Packing time would be faster, too.

In practice, the change to stapled bubble packs has increased production speed by 50%. There's a like saving in costs per package. Customers like the bubble pack so well that sales have jumped 30%.

Ask a Bostitch Economy Man to take a look at your products, with an eye toward stapled bubble packages. If your line lends itself to this idea, he'll show you the low-cost way to change over. He's listed under "Bostitch" in the phone book. Or, send the coupon, if you wish.

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New "K"* cellophanes—result of 36 years of transparent packaging experience at Du Pont—now give you greater brilliance, protection and durability. See how this experience can pay off in better, more profitable packaging for you. Contact your Du Pont Representative or, for printed films and bags, your Authorized Converter of Du Pont cellophane. E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware. *Du Pont trademark*

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DU PONT cellophane

Plants & People

Dan Int-Hout, Sr., has retired as v.p. and board member of **Michigan Carton Co.,** of Battle Creek, Mich. He managed the company's Chicago sales offices for 30 years. **Robert G. Pender** becomes v.p. of board sales and a board member. **Louis J. Phillips** has been appointed v.p., engineering. **Harry Chorpening** continues as general sales mgr.

Int-Hout

Pender

Lassiter Corp., New York, has acquired the **Print-A-Tube Co.** of Paterson, N. J. Print-A-Tube will operate as a div. of **Lassiter,** whose laminated-film production capacity has been tripled as a result of the acquisition, according to the company. **Benjamin Lechner** will continue as pres. of Print-A-Tube.

Kevin J. Solon, asst. to the v.p. and gen. sales mgr. of the Glass Container Div. of **Owens-Illinois Glass Co.,** Toledo, has been appointed director of product planning and marketing research for the Paper Products Div.

The research and development facilities of **White Cap Co., sub. Continental Can Co.,** New York, are being consolidated with those of Concan's **Bond Crown & Cork Div. Roger B. White** has been named gen. mgr. of the new research and development set-up. The merged dept. consists of five sections: Bond Crown Research; White Cap Research; Closure Development; Closure Engineering, and Equipment Development. All will be located at White Cap's plant in Chicago. Future White Cap research will center on new sealing materials, improved machine design, improved resistance to corrosion and scuffing and better closure design.

White

Donald R. Williams has resigned as pres. of **Chippewa Plastics Co., div. Rexall Drug & Chemical Co.** He will become a consultant to the plastics industry. A producer of polyethylene film for packaging, Chippewa Plastics was founded by Mr. Williams in 1948.

Floseal Corp., San Francisco, reports that it is broadening the scope of its operations. The company, which licenses the use of dies for incorporating pour spouts in product containers, has acquired patent rights to a new die-making process which is reported to accelerate carton manufacture. Use of the new dies will be licensed to carton-manufacturing companies by Floseal. The firm also reports that it will move into new offices at 165 Montgomery St., San Francisco.

Owens-Illinois Glass Co., Toledo, will open a plant in the Toronto area for the production of rigid plastic containers. **John H. Chapman** has been named gen. mgr. of the new facility, which is expected to be on stream by May 1. High-density polyethylene containers to be turned out at the new plant will be used by Canadian concerns for packaging liquid detergents and other household products.

Huston

Lassiter Corp., New York, has formed an industrial sales div. to develop sales of combination films and papers, both coated and laminated, for industrial applications. **Earl Huston, Jr.,** has been named to head the new dept., which will handle various combinations of polyethylene, polyester, vinyl, foil, cellophane and similar materials.

Thomas J. Schaefer has been appointed sales mgr. for food packaging in the Boxboard & Folding Carton div. of **Weyerhaeuser Co.** in Tacoma, Wash.

Richard J. Morcom, formerly asst. research mgr., has been appointed mgr. of tech. service in the Film and Sheet Sales div. of **Plax Corp.,** Hartford, Conn. **John Carlile** has been made responsible for the product management of Plax's new folding tray and box mktg. program, involving use of the firm's Polyflex biaxially oriented polystyrene sheet. **Roger J. Chamberland** succeeds Mr. Carlile as mgr. of mktg. administration.

Howard

Darwin Howard has been elected pres. of **The Manz Corp.,** Chicago. He was formerly chief exec. of the **Lustour Corp.,** a company he founded. Mr. Howard, who has been active in the packaging field for 25 years, was associated with **Reynolds Metals** for 12 years. He is planning to expand Manz's food-packaging operations and to increase the company's rotogravure and web-offset-printing facilities. **Lester A. Neumann** is newly elected exec. v.p. of the corporation.

The Hazel-Atlas Glass Div. of Continental Can Co., New York, will erect a $1.5-million research and development laboratory at Plainfield, Ill., near its new container-manufacturing operation.

Seal-A-Round is the name of a new corporation which will manufacture and distribute a low-cost polyethylene wrapping and sealing machine. **Alan H. Mayer,** pres. of the new company, also is pres. of the company which formed it, **Mayco Industries,** Chicago. **Packageers Co.,** Chicago, has been appointed national sales representative.

Lambie

John Lambie has been elected a v.p. of **Diamond National Corp.,** New York. He will be in charge of the company's **United States Printing & Lithograph Div.,** the **Gardner Div.** and **Brooks, Inc.** Mr. Lambie joined **U. S. Printing & Lithograph** in 1929 and at the time of the company's recent merger with **Diamond Gardner,** was v.p. in charge of development and mfg. of advtg. materials.

Alfred P. Terna has been appointed mgr. of aluminum-foil sales for the Foil Div. of **Revere Copper & Brass, Inc.,** New York. He will continue to hold his former position as tech. advisor.

Frank S. Southerland has been named to head the newly created product-development div. in the Pacific Coast Div. of **Owens-Illinois Glass Co., Toledo. Frank Bonner** has taken over Mr. Southerland's former duties as processed-food-div. mgr.

Lay

Forest A. Lay has been appointed sales mgr. for general-line food cans in the Central Metal Div. of **Continental Can Co.,** New York. He succeeds **Paul L. Brachle,** who has resigned. **M. W. Owings** has taken over Mr. Lay's former responsibilities as Minneapolis sales mgr. for cans.

Federal Paper Board Co., Bogota, N.J., has purchased the **Manchester Board & Paper Co.** of Richmond, Va. The Virginia company will function as the Manchester Board & Paper Div.

L. T. Krumm, Jr., has been promoted to mgr. of bleached-board sales in the Fine Paper & Bleached Board Div. of **International Paper Co.,** New York. **George Stuhr, Jr.,** becomes asst. to the sales mgr. in charge of special accounts. The Div.'s regional office in Chicago is now under the supervision of **R. H. Hinman.** Mr. Hinman also will be asst. mgr.-primary grades within International's Midwestern region.

Hooker Chemical Corp., Niagara Falls, N. Y., has realigned the duties of three corporate v.p.'s. In addition to corporate

Birds Eye Green Peas . . . best known waxed paper overwrap in the frozen food field . . . is produced in four colors by four different printers . . . from Intaglio cylinders.

Duplicate cylinders —for 4 different printers!

The familiar Birds Eye Green Peas waxed paper overwrap is printed in gravure by four printers, from duplicate sets of cylinders engraved in New York by Intaglio Service.

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Kellogg recognizes the consumer acceptance of SEAL-SPOUT, the aluminum pouring spout that's practical for packages containing free-flowing products.

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Plants & People [Cont'd]

engineering, **Thomas F. Willers** is responsible for the **Eastern Chemical, Phosphorus** and **Durez Plastics Divs. F. Leonard Bryant** has been assigned responsibility for corporate research, mktg. and general development. **John S. Coey** succeeds Mr. Willers as gen. mgr. of the Eastern Chemical Div. Mr. Coey's former post as sales mgr. of the div. has been assumed by **Charles Y. Cain.** The post of sales mgr. of the Durez Plastics Div., left vacant by the death of **Alfred W. Hanmer,** has been filled by **James W. Ferguson.**

Elias Wolf has been elected chairman of the board of **Metal Edge Industries,** Barrington, N. J. New pres. is **James Eiseman.** Mr. Eiseman was formerly

E. Wolf *Eiseman* *A. Wolf*

v.p. and secy.-treas. **A. E. Wolf** has been appointed sales director of the company. Through research, acquisition of new enterprises and the development of new applications of the firm's packaging methods, Metal Edge Industries anticipates a major expansion of its facilities.

St. Regis Paper Co., New York, is negotiating to acquire **Schmidt & Ault Paper Co.** of York, Pa. The Pennsylvania company produces various grades of paper and paperboard.

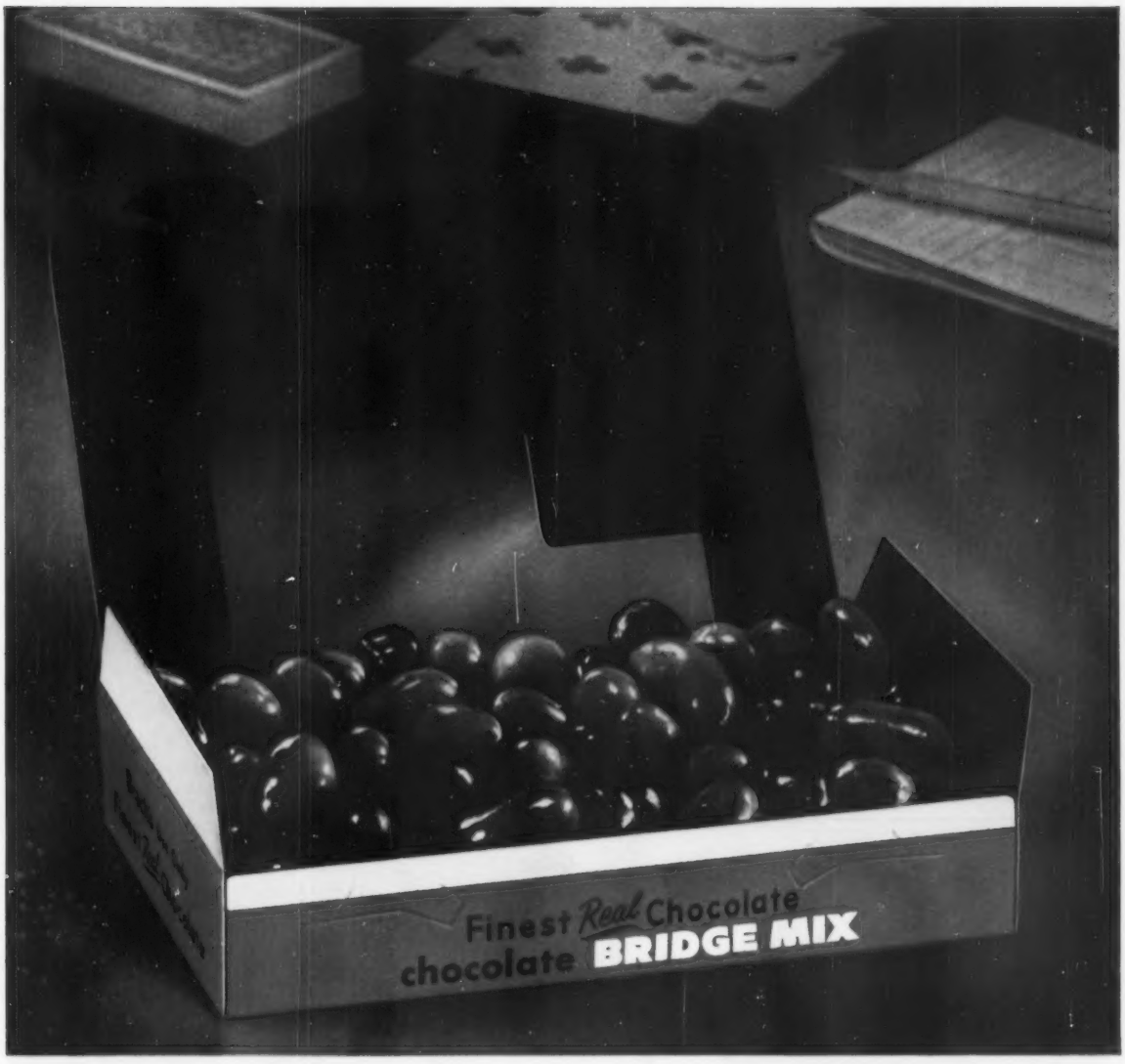
Nicholas R. Sheehan has been promoted to the industrial-sales div. of **The Dobeckmun Co.,** Cleveland, a div. of **The Dow Chemical Co.** In his new post, he is responsible for the sale of industrial products, including barrier materials, laminated card stock and tape and decorative metallic chips.

Crown Cork & Seal Co., Philadelphia, has named **John J. Luviano** gen. mgr. of its machinery div., Baltimore. He will supervise sales, engineering, manufacturing and accounting.

Vigard

E. A. Vigard is now v.p. of the adhesives div. of **H. B. Fuller Co.,** St. Paul, Minn. He is succeeded as v.p. and gen. mgr. of the **H. B. Fuller Minnesota Co.** by **George L. Ryberg. R. E. Foley** has taken over Mr. Ryberg's former duties as v.p. and gen. mgr. of the **H. B. Fuller Co. of Missouri. James Watt** has been named mgr. of tech. services for the adhesives div. of the parent company in St. Paul.

Southwest Lumber Mills, Inc., Phoenix, has changed its name to Southwest Forest Industries, Inc. The company reports that the new name is more



Inside Protection with a Flair

How? E. J. Brach & Sons, Chicago, use Rhinelander's board-lining chocolate Glassine paper. Package designers found that, when Rhinelander Glassine is laminated to box board, chocolate oils can't seep through, messy staining is prevented, and the candy contents keep their appetizing Come-Hither-ness.

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Among its other advantages, Rhinelander Glassine is low in price and handles with remarkable ease on high speed automatic packaging machines.

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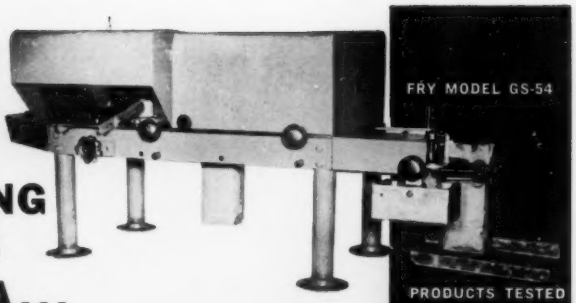
SOLVE YOUR BAG CLOSING NEEDS WITH A...



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Model GS-54 — Continuous motion Master Bag Closer. Heat seals, glues or both. Extra strong, sift-proof closures on plain, coated or lined paper bags.

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Plants & People [*Cont'd*]

accurately descriptive of its operations. The supplier recently purchased **Dolan-Burrus Box Co.** of Phoenix, began construction of a corrugated-board-and-container plant and effected a consolidation with three Los Angeles paper-products companies—**Wilson Paper Co., Vernon Container Corp.** and **Pioneer Wrapping Co.** In addition, the company plans to build a new pulp-and-paper mill in Northern Arizona.

Leeson

Ken Leeson is the new Eastern field mgr. of **New Jersey Machine Corp.**, Hoboken. He has been with the company more than 10 years. New members of the sales staff are **Dave Goddard** and **Steve Dobossy**. In line with the company's policy, these men—like Mr. Leeson—are engineering graduates. New Jersey Machine is a manufacturer of automatic labeling, cartoning and box machines.

Howard V. Fulton has been elected v.p. in charge of West Coast operations of **Anchor Hocking Glass Corp.**, Lancaster, O. He was formerly v.p. and gen. mgr. of **Maywood Glass Co.**

A new company, **U. S. Industrial Chemicals Co.-International**, has been set up to provide sales and technical service to European representatives and processors of Petrothene polyethylene, a product of **U. S. Industrial Chemicals Co., Div. National Distillers & Chemical Corp.**, New York. **Kenneth E. Cosslett** is sales mgr. of the new company, which will be headquartered in Baar, Switzerland. **Howard W. Woodham** is mgr. of the Technical Service Lab.

All packaging research at **Reynolds Metals Co.** has been centralized within a new Packaging Research Div. **A. Irving Totten, Jr.**, has been named gen. director. According to the company, Reynolds' broadened activities in aluminum packaging prompted the establishment of the new set-up. Three depts. make up the new research facility: material research, with **W. P. Andrews** as director; sales development, with **J. M Fultz** as director, and product development, with **W. E. Cheeley** as director. As mgr. of product engineering, **G. A. Rutledge** will coordinate activities of all Reynolds' packaging sales engineers.

Totten

M. W. Zembal has been transferred to Freeport, Tex., to take charge of the Coatings Technical Service-South operation of **The Dow Chemical Co.**, Midland, Mich. **Roy C. Simon** has been promoted to section head. He will continue to supervise CTS-West operations. **Ralph C. Hand** has been named section head of the new Dow plastics and rubber group covering CTS monomer and

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St. Louis, Mo.	Parkview 7-7380
Los Angeles, Calif.	Pleasant 2-0791

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Plants & People [Cont'd]

epoxy resin activities not handled by other sections. **Stanley F. Roth** has been appointed head of the packaging section. He succeeds **F. R. Lehman**, now plastics sales supv. with **Dow Chemical (U.K.), Ltd.**, in England.

Luke

Multiwall-bag operations of **West Virginia Pulp & Paper Co.**, New York, have been given full divisional status. As mgr. of the new Multiwall Bag Div., **Victor S. Luke** is responsible for all div. activities. He formerly was with two of Westvaco's papermaking divs. Reporting directly to Mr. Luke are **Sheldon Y. Carnes**, mgr. of the Northern region, with headquarters in New York, and **Jason M. Elsas**, mgr. of the Southern region, working out of New Orleans.

Richard C. Burton has been named gen. mgr. of the **Canton Corrugated Box Div.** of **St. Regis Paper Co.**, New York. He succeeds the late **Paul F. Vandervort. Robert J. Ress** has become sales mgr., a position formerly held by Mr. Burton.

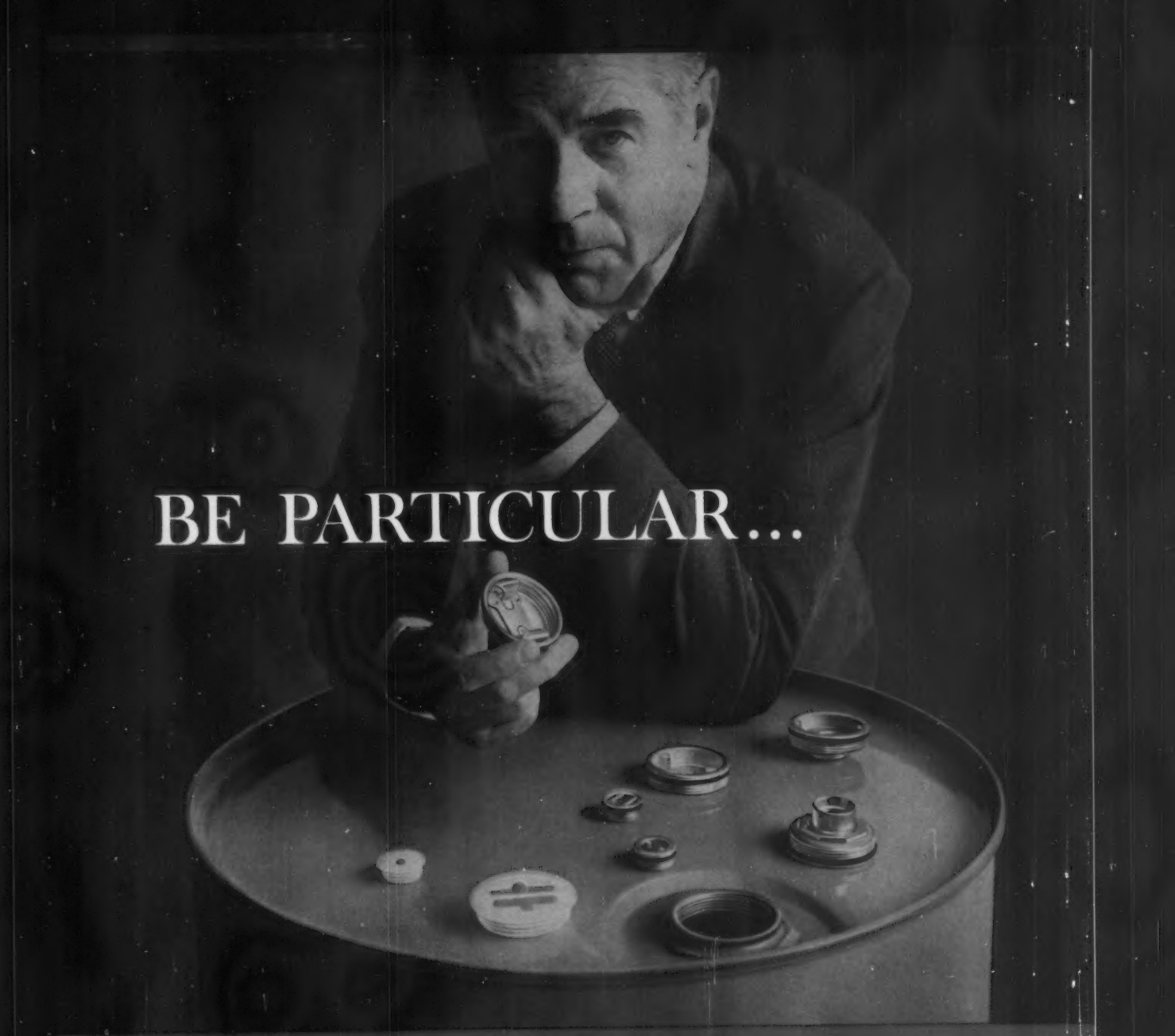
Farris W. Smith has been appointed design and development engineer for the **L. A. B. Corp.**, Skaneateles, N. Y. He will be in charge of customer service in addition to supervising design and development of new products. The company designs and makes package-testing and other equipment.

Allison

Thomas W. Allison has been appointed v.p. in charge of mktg. and sales for **Aluminum Foils, Inc.**, Jackson, Tenn. The company, a sub. of **Aluminium Industrie, A. G.**, of Zurich, Switzerland, produces coiled sheet, foil and Raffinal "super-pure" aluminum. (see MODERN PACKAGING, Nov. 1959, p. 217). Mr. Allison, gen. sales mgr. for the last three years, joined the company in 1950.

Leo R. Davis becomes design mgr. for **Downingtown Paper Co.**, Downingtown, Pa. He was formerly director of package design for **Mead Packaging, Inc.**, Atlanta. He will now supervise creative and structural design for both carton companies composing the recently consolidated Downingtown Paper Co.: the **Downingtown Paper Box Co.** and the **Simplex Paper Box Corp. Leo D. Hamilton** is newly appointed director of sales. **Domer Brenner** has been named sales manager.

Completing reorganization of the company to a divisional set-up, **Dennison Mfg. Co.**, Framingham, Mass., recently named three men to the newly created post of div. v.p. **Howard C. Weeks** becomes v.p. of the Gummed Paper Div., the Box Div. and the Therimage Div. **Howard E. Gorton** is v.p. in charge of the Machine Systems Div. and the In-



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Plants & People [*Cont'd*]

dustrial Products Div. Resale Products Div. and the Holiday Div. are under the direction of **Philip B. Hamilton.**

Jaap Penraat, industrial and consumer-package designer of the Netherlands, has opened an office in New York. **Jaap Penraat Associates** is located at 315 Central Park West. **Kees Van Dyk** and **Patrick Farrel** have been named associate designers.

The merger of two industrial-design organizations, **Ernst Ehrman Associates** and **George Reiner Associates,** was announced recently. **George Reiner** is pres. of the new firm, **Ehrman & Reiner, Inc.,** 212 Fifth Ave., in New York. **Ernst Ehrman is secy.** Both men are directors of the **Package Designers Council.**

Reiner *Ehrman*

Eugene W. Gehm has been named sales mgr. of **Vulcan Containers, Inc.,** Bellwood, Ill. Mr. Gehm, who has been with the firm for 13 years, was formerly asst. sales mgr. He is now responsible for nationwide sales activities for Vulcan in the steel-drum, pail and can fields.

Edwin S. Flinn is the newly elected exec. v.p. of **Hurlbut Paper Co.,** South Lee, Mass. He became chief executive officer of the company upon the retirement of pres. **Edward A. Sitzer.**

Jean Warner Baer, aerosol consultant, has been appointed managing and technical director of **Sprapak Chemicals, Inc.,** new aerosol-packaging div. of **Trio Chemical Works, Inc.,** Brooklyn.

Graydon Cass has joined **Thomasson of Pa., Inc.,** Norristown, Pa., as supv. of the company's laboratory staff. Mr. Cass, formerly in charge of **Crown Cork & Seal Co.'s** aerosol research, will direct quality control and product development. **John J. McAnally** has been promoted to asst. to the pres., in charge of special projects. Thomasson custom packages aerosol products.

As the first part of its program to develop an integrated chemical and plastics manufacturing operation in the Northwest, **The Dow Chemical Co.,** Midland, Mich., plans to construct a phenol plant with a capacity of 36 million pounds per year.

Farrington Mfg. Co., Needham Heights, Mass., has acquired the **Coated Fabrics Div.** of **Sawyer-Tower, Inc.,** Watertown, Mass. **Jacob Saliba,** pres. of Sawyer-Tower, will take over the newly created post of exec. v.p. of the Packaging Div. of Farrington.

To accommodate increasing demands for adhesives and paper coatings formulated with chemically modified corn starches,

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FOLDING CARTONS

for MAILING
for PACKAGING

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VIRGIN KRAFT BOXBOARD
ALL CARTONS MEET
FEDERAL SPECIFICATIONS

1 x 4 x 6¼	2½ x 2½ x 4
1 x 8½ x 11	2½ x 2½ x 6
1¼ x 2 x 3	2½ x 2½ x 8
1¼ x 2⅞ x 4⅜	2½ x 3½ x 5½
1¼ x 3½ x 3½	2½ x 3½ x 6¾
1½ x 1½ x 3	2½ x 4 x 6¼
1½ x 1½ x 4	2½ x 8½ x 11
1½ x 2⅜ x 3½	2⅞ x 2⅞ x 2¹³⁄₁₆
1½ x 2⅞ x 5³⁄₁₆	3 x 3 x 4
1½ x 3¼ x 5¾	3 x 3 x 6
1½ x 5½ x 7¾	3 x 3 x 8
1½ x 8½ x 11	3 x 3 x 10
1¾ x 2½ x 4	3 x 5½ x 5½
1¾ x 2¾ x 3	3 x 5½ x 8½
1¾ x 3¹³⁄₁₆ x 6⅝	3 x 8½ x 11
1⅞ x 2 x 3⅜	3¼ x 5 x 7¼
2 x 2 x 3	3⅜ x 3⅜ x 3⅞
2 x 2 x 4	3½ x 4½ x 5
2 x 2 x 7	3½ x 6 x 8½
2 x 2¾ x 4	4 x 4 x 4
2 x 3 x 5¼	4 x 4 x 6
2 x 3 x 11	4 x 4 x 8
2 x 3½ x 5	4¼ x 4¼ x 4⅞
2 x 4½ x 7¼	6 x 8
2 x 5 x 11	9 x 11½
2 x 8½ x 11	11 x 13½
2⅛ x 2⅝ x 5	12¾ x 15
2⅛ x 4¼ x 6	9¾ x 12¼
2¼ x 7 x 7	13 x 18
2⅜ x 4⅜ x 7⅛	17 x 21

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If none of the stock sizes fit your requirements, we can make as few as 100 special size cartons at a very modest cost. Send us your item or size.
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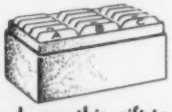

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B MODEL B-49 STRAIGHTLINE VACUUM FILLER. Standard machine has 9 filling heads. Adjustable for container size changes, miniatures to gallons. All contact parts stainless steel or plastic on order. Available with or without discharge conveyor. Request "Bulletin B-49".

C U. S. SIPHON FILLER. Adjustable for all containers, all liquids including foamy products or products that do not permit agitation. Stainless steel tubes; glass lined tank. Request "Siphon Bulletin".

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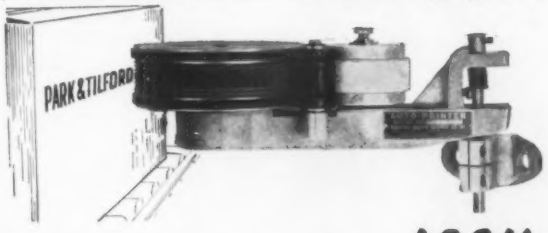

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Plants & People [*Cont'd*]

National Starch & Chemical Corp., New York, has begun a program of expansion. The supplier reports that its corn-milling operations at Indianapolis will be increased by one-third.

A group headed by **Michael M. Young** has purchased the **Dietz Machine Works, Inc.**, Philadelphia. The company supplies machinery to the paper-converting industry. Mr. Young becomes pres. of Dietz. **Reginald Couzens** has been named v.p. of engineering.

Dr. Walter A. Dean has been named asst. director of research for **Aluminum Co. of America**, Pittsburgh. He succeeds **William T. Ennor**, who is retiring. Dr. Dean, formerly development metallurgist, joined the company in 1929. **A. B. Wilbur**, mgr. of the process-development laboratories and v.p. of **Wear-Ever Aluminum**, has retired.

John D. Czarnecki becomes director of research for the container div. of **Sherwin-Williams Co.**, Cleveland. He will direct basic and applied research in container design and construction, and also will direct the development of materials for non-food containers.

Church & Guisewite Advertising, Inc., Midland, Mich., has instituted a package-design service and has set up a separate business to handle it, under the name of **C & G Packaging, Inc.** The firm is located at 121 McDonald St. in Midland.

Minnesota Mining & Mfg. Co. will build a $10-million administration building at its research center near St. Paul.

Owens-Illinois Glass Co., Toledo, is building a new plant in North Kansas City, Mo., to make semi-rigid plastic bottles. According to O-I, the acceptance of the high-density-polyethylene container for liquid detergents has made it necessary to increase production.

The **Eleonora Div.** of **The Pantasote Co.**, Passaic, N. J., plans to increase its polyvinyl chloride resin capacity by more than 300%.

Promotions

M. J. Warnock: to senior v.p. and member of board of directors, **Armstrong Cork Co.**, Lancaster, Pa. **William Ziegfeld:** to asst. chief packaging engineer.

Hazen P. Master: to sales mgr., Baltimore district, Metal Div., **Continental Can Co.**, New York.

George W. Rapp, Jr.: to mgr., St. Louis sales office, **Anaconda Aluminum Co.**, Louisville, Ky.

David Bishop: to head of package-design div., **Harley Earl Associates**, Detroit. **William Blau** and **C. Craig Paul:** both to v.p.

Albert C. Brooks: to mgr., Baltimore sales div., **U. S. Industrial Chemicals Co., Div. National Distillers & Chem-**

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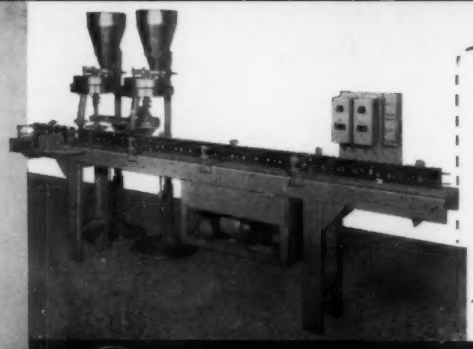

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Plants & People [*Cont'd*]

ical Corp., New York. He succeeds James F. Whitescarver, retired.

Edward J. Gillespie: to Midwest district sales mgr., Plastics Div., Ludlow Papers, Inc., Needham Heights, Mass.

Winthrop Endicott: to sales mgr., Carolina Div., Riegel Paper Corp., New York. **Rodger C. Derby:** to asst. mgr., paperboard sales.

M. H. Priddy, Jr.: to sales mgr., Gas Atmospheres, Inc., Cleveland.

John J. Verstraete, Jr.: to director of communications, Minnesota Mining & Mfg. Co., St. Paul.

Richard Arnesen: to associate, Smith, Scherr & McDermott, Akron, O.

Roy A. Parker: to sales mgr., Kansas City, U. S. Industrial Chemicals Co., div. National Distillers & Chemical Corp., New York. **Joseph G. Longstreth:** to sales mgr., St. Louis.

Edgar B. Hoppe: to director of European operations, Brussels, Belgium, St. Regis Paper Co., New York.

Appointments

A. S. Houston: from Panta-Pak Div., Pantasote Co., to Midwest sales mgr., National Packaging Corp., Fort Wayne.

Howard J. Helms, Jr.: from Tom Sawyer Meat Products to Eastern regional sales mgr., Rap-In-Wax Paper Co., Minneapolis.

Dr. Reginald L. Wakeman: to director, technical research and development, Packaging Corp. of America, Chicago.

Sy E. Einhorn: to v.p. in charge of Display Div., Atlantic Container Corp., Long Island City, N. Y.

Norman A. Olson: to editor, *Consumer Packaging Magazine*, Haywood Publishing Co., Chicago.

Andrew J. Alessi: from Burry Biscuit Co., to v.p., sales engineering, Bell-Mark Corp., Newark.

J. A. Davies: to head of the water-base flexographic ink div., Flint Ink Corp., Detroit.

Obituaries

Paul F. Vandervort, 62, v.p. and gen. mgr. of the Canton Corrugated Div. of St. Regis Paper Co., died Nov. 19 in Canton, O. Mr. Vandervort joined the company in 1930 as gen. mgr.

J. Alfred Anglada, mgr. of market development for the Film Div. of American Viscose Corp., died Dec. 16. He was 52 years old. Mr. Anglada was an active member of the Packaging Institute and the National Flexible Packaging Assn. Shortly before his death, he contributed to MODERN PACKAGING's editorial feature, "Sounding Board" (see Jan., 1960, issue, p. 58).

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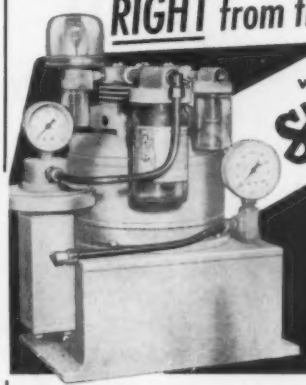

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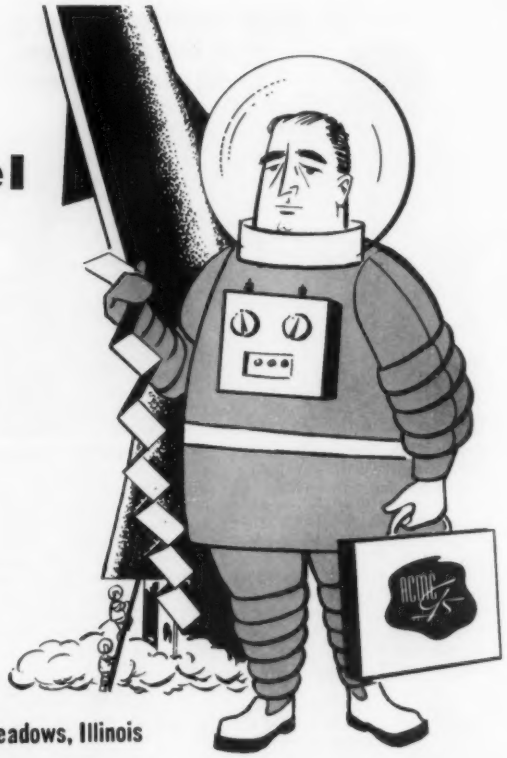

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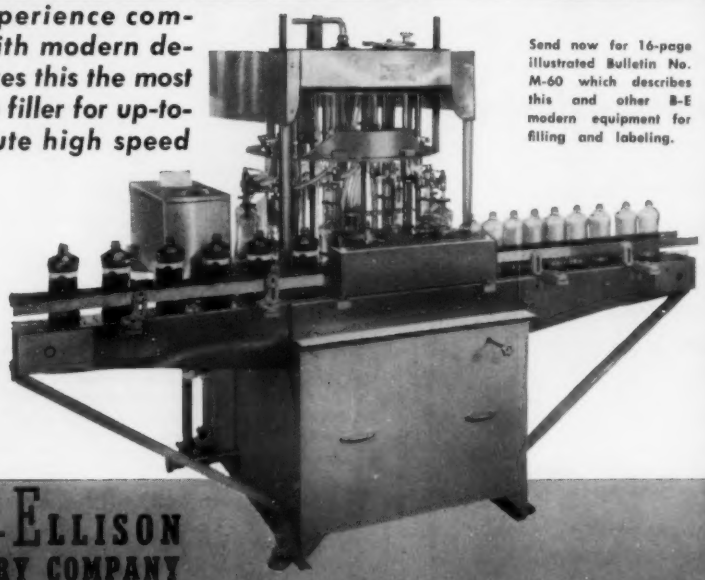

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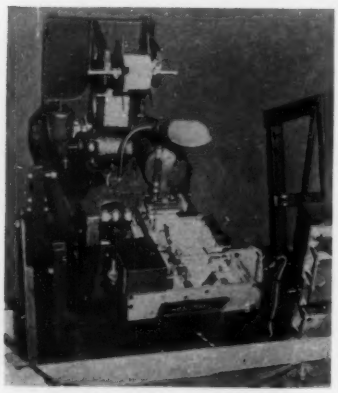
Equipment & Materials

[*Continued from page 50*]
feeds it into the machine for automatic gluing and sealing. According to the supplier, the feature of strip glue application not only accelerates drying time but also saves up to 75% in glue consumption. The sealer is adjustable to handle a wide range of case sizes. One lever motion adjusts for carton width; a handwheel adjusts for height. The sealing machine has fully enclosed, self-cleaning, non-clogging glue valve applicators with gravity glue feed. The company reports that these units eliminate the need for costly clean-up time. *National Equipment Corp., Packaging Div., 153-157 Crosby St., New York 12.*

Applying labels to film packages

A machine which automatically applies pressure-sensitive labels to conveyor-carried polyethylene packages has been introduced by Amsco. The firm's Amscomatic 300 uses perforated-edge labels which are spaced apart on the backing strip. Labels are fed from a reel equipped with power unwind that enables it to accommodate large rolls. Activated by an electric eye, the new attachment affixes one label to each package traveling along the conveyor. According to the supplier, it can apply labels at speeds up to 144 packages per minute. Labels can range in size from 15/16 by 1 in. to 1½ by 4 in. *Amsco Packaging Machinery, Inc., 31-31 48 Ave., Long Island City 1.*



Strong, resistant packaging tape

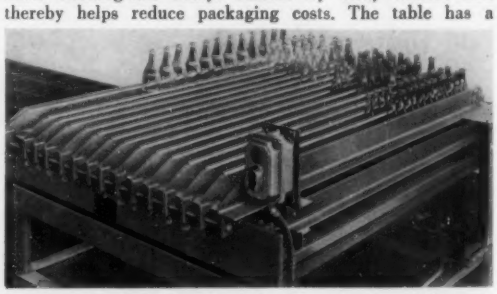
A transparent, film-backed tape that is reported to be resistant to water, acids, alkalies and other strong solvents, is being marketed by 3M. Scotch brand Paklon film tape No. 681, made with transparent vinyl film backing, also is said to hold up well under wide ranges in temperature. It possesses a long-aging adhesive designed for instant contact. The tape can be used with most manual, semi-automatic or automatic dispensers and applicators, says the company. Because of its high dimensional stability, the vinyl tape reportedly remains unchanged by severe atmospheric conditions and is not affected by humidity or moisture. It is 2.8 mils thick and has a tensile strength of 30 lbs. per in. of width. The tape is available in widths from ¼ in. to 43 in., and in 72-yard lengths. *Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6.*

New heat-seal label paper

Nashua claims that its new heat-seal label paper solves the problem of labeling polyethylene-coated cellophane film used for the pre-packaging of meats. The label paper, Pervenac BM-6X, performs successfully on standard automatic and semi-automatic labeling equipment, says the company. It is also said to possess an excellent printing surface. In addition to improved adherence, features cited for the label paper include: faster activation, flexibility of labeling-machine speeds and a low application point which doesn't lower blocking point. *Nashua Corp., Nashua, N.H.*

Stray-bottle sorting table

Climax Products reports that its new sorting table eliminates bottling-line delays caused by stray bottles and thereby helps reduce packaging costs. The table has a number of adjustable channels. Stray bottles picked off the line are placed in the appropriate channel. A conveyor belt underneath the channel section delivers bottles to the far end of the table. The table is designed to fit inside the loop of the returned-bottle-and-case line, for operator convenience. Several models of the table are available, to accommodate up to 15 different bottle sizes. *Climax Products Div., The Lodge & Shipley Co., 3055 Colerain Ave., Cincinnati 25.*

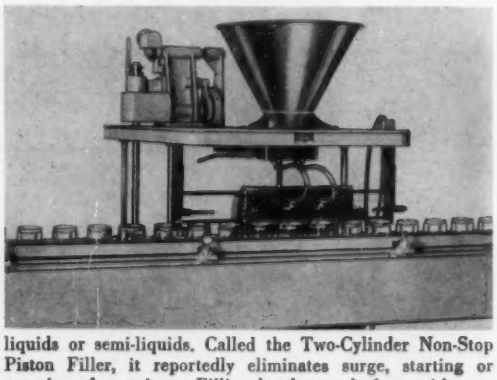


Nylon 'hook-and-eye' closure material

Velcro is a nylon closure material with a potential for application in the storage, re-use and luxury packaging fields. The material, which is marketed by Velcro Sales, consists of two woven tape strips which lock firmly when pressed together. One tape contains many soft loops, the other contains stiff hooks. By pressing the tapes together, the loops engage the hooks. According to the supplier, the tapes can be pulled apart and resealed thousands of times without loss of effectiveness. In a laboratory test, 14.2 lbs. of tensile pressure were required to separate the tapes after 32,500 closing-opening cycles. Currently, the nylon tape material is being used as fastenings in clothing, upholstery coverings and other products which require frequent opening and reclosing. The tape, which can be secured by adhesive or by stitching, is suggested for use on corrugated storage boxes, jewelry cases and other types of package which must be securely reclosed and opened many times. *Velcro Sales Corp., 681 Fifth Ave., New York 22.*

Continuous-operation piston filler

Elgin Mfg. has introduced a continuous-operation piston filler for filling glass, metal or plastic containers with liquids or semi-liquids. Called the Two-Cylinder Non-Stop Piston Filler, it reportedly eliminates surge, starting or stopping of containers. Filling heads travel along with con-



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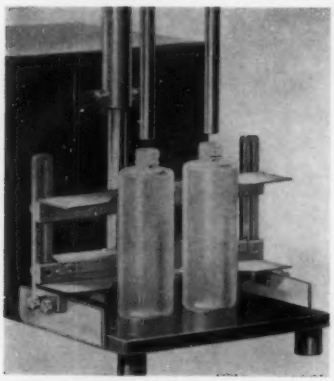
tainers moving on the conveyor during the filling cycle. After filling is completed, the filling heads automatically return to the next two containers in line. According to the supplier, this action speeds up the filling rate per cycle. Simplified product or container change-over is another feature cited for the new machine. *Elgin Mfg. Co., Elgin, Ill.*

Bottom-up filling attachment

A bottom-up filling attachment which adapts Filamatic portable filling machines to foaming liquids is offered by National Instrument. With the attachment, the filling nozzles are automatically lowered into the bottles and then raised as the liquid level rises in the container, to minimize foaming action and permit faster filling speeds. An adjustment on the new unit permits the rate of rise to be regulated to coincide with filling speed. An adjustable nesting jig adapts the attachment for use with any-size container up to 16 oz., says the supplier. Nozzles can be adjusted to remain under the surface of the liquid or just over the surface during the fill cycle. *National Instrument Co., 2701 Rockwood Ave., Baltimore.*



Low-cost, lighter-weight aluminum cap

A new, lower-cost aluminum cap for ketchup bottles is being offered by Alcoa. Called the Short-Flange Flavor-Lok, the closure is priced as much as 12% below the company's standard line of ketchup-bottle caps. In addition, the supplier points out, packagers can realize additional savings because of the new cap's lighter weight. The cost and weight savings are made possible by a shortening of the cap flange and a reduction in the thickness of the cap liner. The closure's protective properties are in no way affected by these modifications, the supplier says. Available in 28mm and 31mm sizes, the cap can be applied by present sealing machinery. *Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19.*

Automatic weighing and sorting equipment

Mettler Instrument has introduced a new series of electronic checkweighing and sorting scales for package-weight control and an automatic net weigher for granular or powdered materials. On the checkweighing and sorting scales, weight is detected in five steps, making it possible to statistically record the number of packages falling in each step, reject or sort them by weight or provide an automatic warning system for automatic adjustment of the packaging machine. The scales are available in four capacity ranges, from 1/50 oz. to 2.2 lbs. Minimum tolerance limits are plus or minus 0.00025 oz. to 0.175 oz. The new net weigher is available in capacities of 1/3 oz. and 3.3 oz., with minimum tolerances of 0.0016 oz. to 0.016 oz. Overweight samples are rejected automatically. *Mettler Instrument Corp., Hightstown, N.J.*

Wood-and-polyethylene shipping container

Designed for use in the chemical, food, drug and paint industries is Package Research Laboratory's returnable composite shipping container for liquids. It consists of a rigid inner polyethylene drum (made by Delaware Barrel & Drum Co.) and a wirebound wooden outer case. According to the supplier, the new container is more durable, lighter and less costly than shipping containers consisting of steel drums and polyethylene liners. Four sizes are available: 5-, 15-, 30- and 55-gal. The latter three are octagonal in shape. The company says that all four sizes have passed M.C.A.-I.C.C. tests for regulated liquids. *Package Research Laboratory, Rockaway, N.J.*

Polyethylene dispensing containers

Easy-to-grip, vase-shaped flexible polyethylene containers for liquid products are being offered to packagers by Successful Products. The supplier's Rainbow Dispensers have a 20-oz. capacity. A graduated scale engraved on the back of each container indicates 2-, 4-, 6-, 8-, 10-, 12- and 16-oz. levels. This feature, plus container translucency, makes for easy product mixing in the dispenser, says the company. The containers are available in four colors: pink, blue, green and yellow. In quantity orders, other colors also can be provided. The containers come with or without 28mm. spout cap. Further details on the new packages are available from *Successful Products, 437 Fifth Ave., New York 16.*

Stapler closes filled cartons

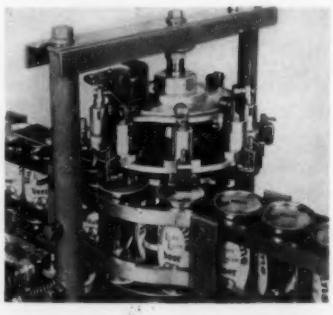
Container Stapling's new Model P-LH automatic stapling machine can be used in any position to close filled cartons. It is equipped with an automatic mechanical trip which clenches the staple and retracts automatically. King-size staples can be driven at the rate of 400 per minute, says the firm. No air cylinder, servo valve, lubricator or filter are required in its operation. A new adjustable anvil permits stapling of A-, B- or C-flute corrugated board. A twist of an adjustor screw controls the staple clip for any flute thickness. *Container Stapling Corp., Herrin, Ill.*

Stripping of container waste

Automatic high-speed stripping of interior and exterior waste is available on its Bobst die-cutting and creasing Autoplatens, says Thomson-National. The presses are offered for either folding-box or corrugated-solid-fibre die cutting. Single-stripping-station models automatically remove all interior trim except the leading gripper edge. Double-stripping-station models deliver a finished sheet. Press speeds of up to 3,600 sheets per hour can be attained on larger corrugated presses, and speeds up to 4,500 sheets per hour are possible on single-stripping models of folding-box presses and corrugated-solid-fibre presses, says the firm. *Thomson-National Press Co., Franklin, Mass.*

New imprinting attachments

Two new imprinting attachments have been introduced by Gottscho. Shown is the Model TMT Markocoder, a high-speed imprinter for marking code dates or other brief data on the tops of cans, jars, bottles and other basically cylindrical containers. The new unit is self-powered and self-synchronizing. It operates at up to 1,000 imprints per minute, says the supplier. The automatic imprinter, which can be inserted at any convenient point in the conveyor line, accelerates and decelerates to match product flow. It is designed for quick change-over of copy, and can mark surfaces which are recessed as much as 5/8 in. The second new unit is the Series 450 Rolacoder. This attachment imprints labels after they have been applied to containers. It can be installed vertically or horizontally to imprint from side, above or below on all types of roll-through labelers. The compact unit measures 1¼ by 1½ by 3½ in. Additional details are available from the supplier, *Adolph Gottscho, Inc., Hillside, N.J.*



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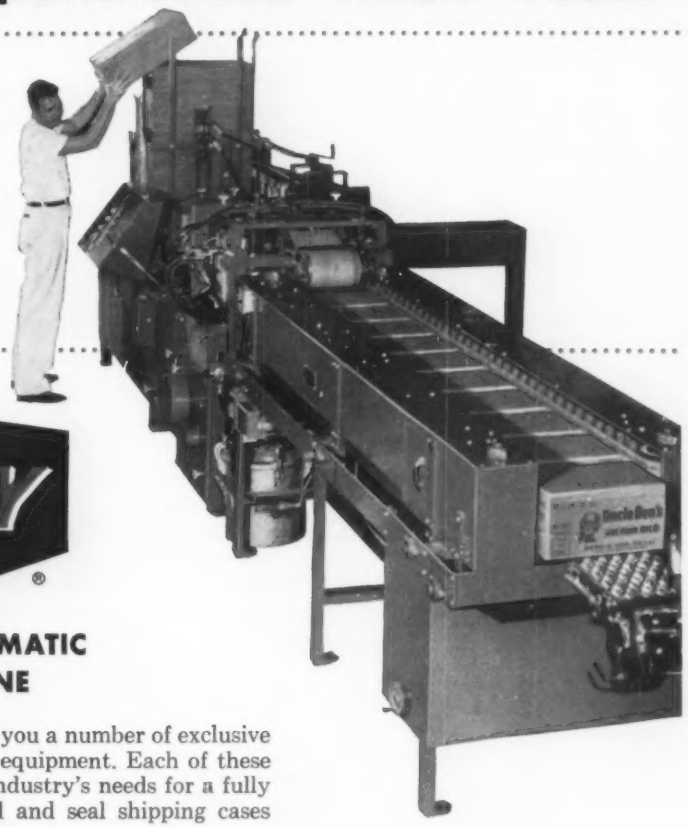
—up to 25
cases a minute



SURE-WAY®

MODEL 50 FULLY AUTOMATIC INTEGRATED CASING LINE

The Model 50 "Sure-Way" brings you a number of exclusive features in fully automatic package casing equipment. Each of these features is carefully designed to meet the industry's needs for a fully *automatic* machine to erect, position, load and seal shipping cases in a continuous high-speed, in-line operation.

Shut downs and bottlenecks are eliminated. Operating costs are reduced. To sum it all up, here is the machine that helps build profits. Here are a few of the major features:

The new shipping case feeding and erecting mechanism employs duplex vacuum cups which are cam activated, stripping the bottom case from the vertical stack of 125 or more flat shipping cases.

New pressurized gluing system, incorporating "No case-No glue" device, gives greater uniformity of glue application, cuts maintenance and cleanup time. Intermittent motion of the compression unit allows maximum dwell time in minimum floor space – the average unit is less than 29′ long, overall.

Complete console station centralizes all control of the machine, ensuring a smooth uninterrupted operation. Safety interlock switches throughout provide sure, positive functioning. Write for full information or call your nearest FMC representative.

The automatic case erecting-positioning assembly and the sealing-compressing assembly are available separately for existing installations of "Sure-Way" Casers.

"Sure-Way" Model 50 integrated casing lines are operating in several leading plants. Shown here is one of two complete lines at the Houston plant of Uncle Ben's, Inc. Others already installed, or scheduled for early delivery, will be handling a wide variety of packaged products such as aluminum foil, cake mixes, sugar, soap and detergents. There is virtually no limit to the range of packages, patterns, case sizes and casing combinations the "Sure-Way" can handle.

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION®

FOOD MACHINERY AND CHEMICAL CORPORATION
Sure-Way Caser Equipment
Distributed Exclusively by FMC
General Sales Offices:
FMC PACKAGING MACHINERY DIVISION: 4900 Summerdale Ave., Philadelphia, Pa.
CANNING MACHINERY DIVISION: Hoopeston, Ill., San Jose, Calif.

LOOKING FOR . . .

Materials and Supplies: Adhesives? Closures? Foil? Labels? Ribbons and ties? Valves?

Container Suppliers: Aerosol containers? Bags? Crates? Envelopes? Jars? Trays?

Machinery and Equipment: Box making machines? Conveyors? Extrusion dies? Filling machines? Heat sealers? Injection machines? Ovens? Slitters?

Services: Contract packaging? Custom laminating? Engineering consultation? Package designing? Rotogravure engraving?

A Directory of Trade Names of packaging materials and products?

An Alphabetical List of Suppliers to the packaging field—accurate, up-to-date?

YOU'LL FIND THEM IN

the Directory Section of the *new* 1960 818-page MODERN PACKAGING ENCYCLOPEDIA ISSUE. And—be sure to check the *advertisements* of the companies whose products or services you're investigating.

MODERN PACKAGING ENCYCLOPEDIA ISSUE

. . . for fast, accurate answers to packaging problems

PAPER and BOARD for modern packaging

There's hardly an industry or business that doesn't have some use for some Gilman Paper Company products, produced under sustained quality controls at two fully integrated mills by the third generation of the founding family.

We Invite Inquiries:

BLEACHED SULPHATE BOARD
for food packaging, drinking cups, cigarette cartons, milk containers, linerboard, file folders, and others.

BLEACHED AND UNBLEACHED KRAFT
for all purposes including: colored kraft, creped kraft, kraft for laminating, waxing, asphalting, twisting, wet strength, pH control, water-repellent, insulating, vapor barrier, cable wrap, coin wrap, stuffer paper, masking paper and creped closure tape.

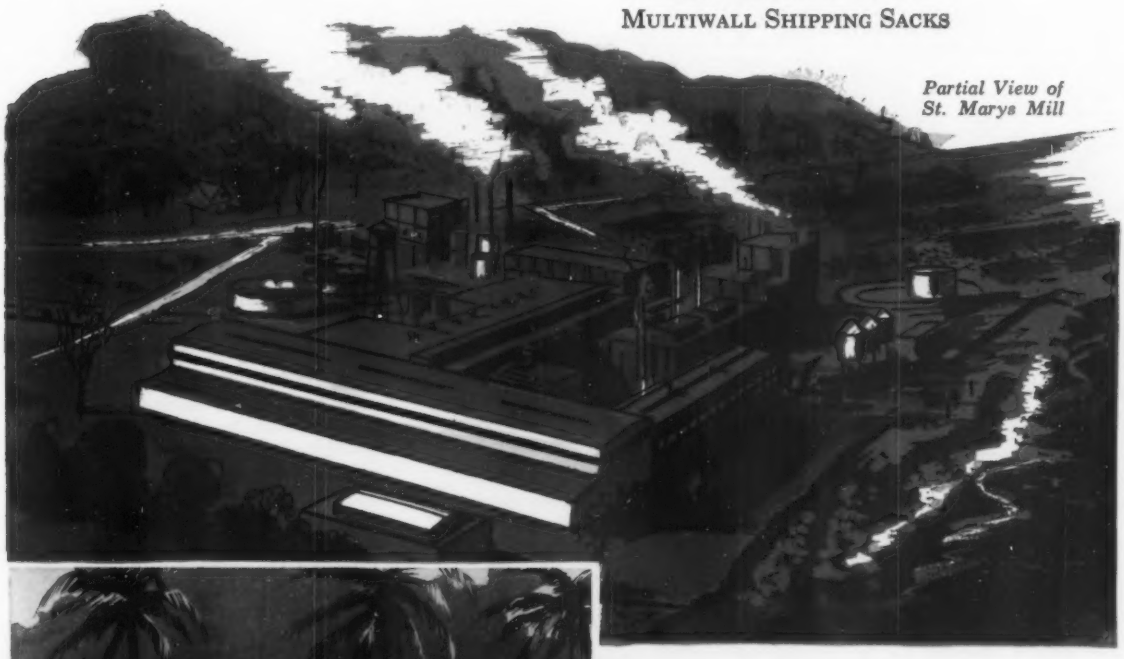
GUMMED SEALING TAPE
regular and reinforced, in natural or colors, plain or printed

STAY TAPE, VENEER TAPE

CELLUCORD® (KRAFTCORD®)
Cellufiltercord

GROCERY BAGS AND SACKS

MULTIWALL SHIPPING SACKS



Partial View of St. Marys Mill

New 300,000 sq. ft. addition to converting facilities at St. Marys, Ga., scheduled to go "on stream" in February '60.

GILMAN PAPER COMPANY

630 Fifth Avenue, New York 20
Daily News Bldg., Chicago 6, Ill.

Subsidiaries:
Kraft Bag Corporation
St. Marys Kraft Corporation
Cellucord Corporation
Paper Mills and Converting Plants at St. Marys, Ga. and Gilman, Vt.

For Your Information

A new source of scientific abstracts, in the form of a 10-issues-per-year bulletin, is available from the **National Flexible Packaging Assn.** Titled *Science for Packaging*, the unbound selection of abstracts (from published articles, reports, patent issuances, etc.) is directed to the field of flexible packaging and is written and edited by **Dr. Clarence E. Irion** of Battelle Memorial Institute. According to the announcement by NFPA, it is a supplementary service which complements and does not compete with industry publications. Cost of a one-year subscription to the abstract service is $50, payable to NFPA at 11750 Shaker Blvd., Cleveland 20.

The **Packaging Institute** has changed the name of its Technical Operations Committee to Technical Coordinating Board. New chairman of the Board is **W. B. Tibbets** of Union Carbide Plastics. PI also reports the election of new chairmen for each of the five divs. of its Technical Committees. The divs. and their new chairmen are: Materials Div., **Stanton D. Smith**, Dow Chemical; Product Div., **R. J. Hennessy**, Lederle Laboratories; Production Div., **I. G. Nichol**, Morningstar-Paisley; Printed Packaging Div., **Ernest A. Green**, Interchemical Corp., and Machinery Div., **Ira Gottscho**, Adolph Gottscho, Inc.

The "100 best cartons of the year" from four major categories will be selected by 22 printing and packaging experts who have been named judges for the **Folding Paper Box Assn. of America's** 15th annual folding-carton competition. Winners will be announced March 23 during the association's annual meeting in Los Angeles.

Charles L. Lippman has been elected national pres. of the **Society of Packaging & Handling Engineers.** Mr. Lippman, who is with the Columbia-Geneva Div. of U. S. Steel, succeeds **John Mount**, now chairman of the board.

The Borden Chemical Co. has made available a new list of approved nontoxic adhesives for food-packaging applications. Included in the group is a series of resin-based emulsion glues especially designed for convolute and spiral-wound food containers. Food-clearance data from independent testing laboratories may be obtained upon request. Information on the development is available from Borden's Dept. H. at 350 Madison Ave. in New York.

The low-molecular-weight polymers now available are allowing for greatly expanded use of polyethylene in the coated paperboard-market, according to a paper read before a regional technical conference on plastics in packaging, held by the Society of Plastics Engineers in Berkeley, Calif. In his address, **Robert Rosenbaum** of Allied Chemical's Semet-Solvay Petrochemical Div. explained that the low-molecular-weight polymers show greater compatibility with wax and other additives and can be run at lower temperatures on standard machines.

The **American Rack Merchandisers Institute** held its ninth annual convention at the Sheraton Towers Hotel in Chicago, Jan. 5-10. More than 4,500 nonfood products were on display in the Sample Show held in conjunction with a Buyers' Seminar on products ranking best for sales in U. S. supermarkets.

The fourth edition of the *Chemical Industry Facts Book* is available, at $1.25 per copy, from the **Manufacturing Chemists' Assn.**, 1825 Connecticut Ave., N. W., Washington 9, D. C. The 163-page, paperbound book is a round-up of data on all facets of the chemical industry. A five-page section is devoted to chemicals as food additives and to Federal law governing their use.

Hayward R. Blake is the new pres. of the **Society of Typographic Arts.** He is director of graphic design for Ekco-Alcoa Containers.

The newly organized Industry Advisory Committee on corrugated-container research held its first meeting at the **Forest Products Laboratory** of the **U. S. Forest Service** in Madison, Wis., Oct. 28 and 29. Formed to create better coordination between corrugated-container research and the specific needs of users, the group plans to develop specifications data for better and more economical fibreboard boxes and to disseminate news on developments.

Despite declining prices of many food commodities, grocery-store sales for the first half of 1959 were ahead of the same period of a year ago, according to the "25th Annual Nielsen Review Of Retail Grocery Store Trends," an **A. C. Nielsen Co.** report. More than 900 facts and figures on trends in the grocery-store business are to found in the 32-page, illustrated booklet, which is available free of charge from the A. C. Nielsen Food-Drug Industry Relations Dept., 2101 Howard St., Chicago.

The proceedings of the 45th midyear meeting of **Chemical Specialties Mfrs. Assn.** have been published in book form. The 204-page volume contains all papers, discussions and committee reports presented at the meeting. Per-copy price in the U.S. and Canada is $7.50 postpaid. Address orders to CSMA, 50 E. 41 St., New York 17.

Herbert W. Hamilton, secy. of the association, has been named winner of CSMA's 1959 Achievement Award. He received the award for "outstanding contributions in chemical specialties."

The **American Management Assn.** has conferred its Distinguished Service Award on **C. Lee Rumberger** in recognition of his work as v.p. of AMA's Packaging Div. Mr. Rumberger is v.p. in charge of reseach and quality control at H. J. Heinz Co. **Henry Schniewind**, v.p. of Springs Mills, Inc., has been elected v.p. of the Packaging Division.

A senior post-doctoral research fellowship at England's University of Cambridge has been announced by **Owens-Illinois Glass Co.**, Toledo. The fellowship will provide $4,500 a year for three years. The fellow will conduct research in one of three areas: friction of glass against metal at high temperatures, crystallization phenomena at glass surfaces, or changes in surface structure due to changing environment of the glass.

Interpack 1960—International Packaging Exhibition & Display of Confectionery Machinery—will take place in Düsseldorf, West Germany, April 20-27. This year the fair is emphasizing a trend away from luxury in packaging, toward economy of materials and form. Outstanding examples of packaged goods will be on display as well as the most advanced machinery and equipment. There will be a special section on

Events

Jan. 26-28—**National Flexible Packaging Assn.**, annual meeting, Waldorf-Astoria Hotel, New York.

Feb. 1-2—**Packaging Institute**, Petroleum Packaging Committee, meeting, Lassen Hotel, Wichita, Kans.

Feb. 2-4—**The Society of the Plastics Industry**, 15th conference of Reinforced Plastics Div., The Edgewater Beach, Chicago.

Feb. 4-5—**Flexographic Technical Assn.**, second annual meeting and technical forum, Palmer House, Chicago.

Feb. 7-8—**National Wooden Pallet Mfrs. Assn.**, 13th semi-annual meeting, Hollywood Beach Hotel, Hollywood, Fla.

Feb. 8-10—**Fifth Joint Military-Industry Packaging & Materials Handling Symposium**, Sheraton Park Hotel, Washington, D. C.

Mar. 8-9—**Packaging Assn. of Canada—Toronto**, national packaging conference, King Edward Hotel, Toronto.

Mar. 22-23—**Folding Paper Box Assn. of America**, annual meeting and competition, Ambassador Hotel, Los Angeles.

Mar. 22-24—**Lithographic Technical Foundation**, annual meeting, Conrad Hilton Hotel, Chicago.

MOVE IT

in DI-CEL cartons

A wide variety of bakery items—cakes, cookies, biscuits, sweet rolls—reach the retail store in undamaged condition when packed in CCA's unique new carton. Its name: DI-CEL®. Because of its cushioning cell structure DI-CEL prevents rolling (and breaking) of baked goods in transit. Results: fewer markdowns because of spoilage, greater acceptance of your product by retailers and customers alike. To **pack it—move it—sell it** is the business of CCA packaging.

CONTAINER CORPORATION OF AMERICA

CCA

Chicago 3...and all key marketing areas. Folding Cartons, Shipping Containers, Sefton Fibre Cans, Molded Plastic Products

point-of-purchase items. Specialized machinery for packaging pharmaceutical and confectionery items will occupy a major part of the exhibition. Interpack dates coincide with those of the 1960 German Industrial Fair at Hannover.

A new, 17-minute sound color movie, "The Winning Combination," is available for showing without charge from the Advertising Dept. of **Milprint, Inc.**, 4200 N. Holton St., Milwaukee. The development of suitable film and foil laminations and polyethylene extrusions for specific packaging problems is traced in the film, which shows trends in the field and demonstrates the reasons behind laminated packaging.

Papers of special interest to design and production engineers in the packaging field were presented at the 16th ANTEC National Meeting of the **Society of Plastics Engineers**, Jan. 12-16.

"American Standard Pallet Sizes, MH1.1-1959," recently published by **American Standards Assn.**, provides for all 11 standard standard pallet sizes. Full use of the standard by industry will bring extensive savings, according to ASA. The standard can be obtained for $2 per copy from ASA at 70 E. 45 St., New York, or from **The American Society of Mechanical Engineers**, 29 W. 39 St., New York.

Mead Containers, Inc. has published a 20-page brochure titled "Mead Container Power." The illustrated brochure gives examples of how corrugated containers can be used to cut costs and promote sales. Copies are available without charge from the company, at 4927 Beech St., Cincinnati.

A new illustrated folder has just been released by **Paper Converting Machine Co.**, covering its newly developed 6-color flexographic printing press. Copies are available, without charge, from the company headquarters in Green Bay.

The sponsors of AIDA 1959—the **Fourth International Congress on Food Distribution**—are making available three printed volumes on all the reports and proceedings at the Swiss conclave. Information on volume contents and prices is available by writing to AIDA 1959, Postfach 21, Basel 18, Switzerland.

The **Technical Assn. of the Pulp & Paper Industry** has moved to new and larger quarters at 360 Lexington Ave., New York.

Technical discussions geared to the theme: "Four Basic Steps to Quality Flexographic Printing . . . Through Better Preparation" highlighted the recent annual meeting and technical forum of the **Flexographic Technical Assn.** The two-day affair was held Feb. 4-5 at the Palmer House in Chicago. Speakers explored the entire range of preparatory printing procedures, from raw copy to press run.

Standard Packaging's marketing approach triggers sales...

here's proof:

Luncheon meat promotion scores bullseye

Recently Standard Packaging helped expand a lucrative market for FLEX-VAC vacuum-packed luncheon meats...by promoting *direct* to housewives. Highlight of the program was a consumer contest sponsored and merchandised by the company's *Flexible Packaging Division* and *Modern Packages Division*. Over 140 packers participated and tied in with their brands. Result: the biggest luncheon meat sales in history!

Remove the band -it's gift-wrapped!

Why gift-wrap cartons of liquor bottles? You don't have to, with Standard Packaging's "two-in-one" overwrap, developed by the *Bradley & Gilbert Division*. Covering the carton is a lithographed paper overwrap with attractive gift design. A cellophane band over this carries brand identification and other mandatory copy. Slip off the band (and the commercial) and your gift is ready-wrapped.

Stand-up plate package a standout salesman

Standard Packaging applies the "what's-best-for-the-buyer" type of thinking to its own products, as well as to its customers'. One example: an easel display pack developed for paper plates made by Standard Packaging's *Fonda Container Division*. The easel package sells effectively even when stacked flat on store shelves. Retailers call it "the most persuasive paper plate salesman in the trade."

FILM • FOIL • PAPER AND BOARD PACKAGING • PAPER PLATES • CUPS • BOWLS AND TRAYS • FINE PRINTING AND BUSINESS PAPERS • PAPERBOARD AND PULP STOCK

ALL FROM ONE COMPLETELY INTEGRATED, CONVENIENT SOURCE:

STANDARD PACKAGING CORPORATION

It's becoming increasingly difficult today to name an industry that *doesn't* specify Standard Packaging. • Why? Standard offers you a *marketing* approach to packaging–based on an understanding of your product from conception to consumer. The way it is made. Its uses and features. How it is distributed. Who buys it . . . and why. Which types of materials–paper, film, foil (or combinations)–are most effective. And most economical. • This total marketing concept is as important to successful packaging as it is to successful advertising. It means looking at your package from your *customer's* viewpoint. Always. • In the final analysis – isn't this the viewpoint that matters most?

STANDARD PACKAGING CORPORATION · Executive Offices: 200 East 42nd Street, New York 17, New York

U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Bag-Closing Machine, Richard J. Bartlett, Claude C. Hall Pitman and Jack A. Martell (to Smith, Kline & French Laboratories, Philadelphia, a corporation of Pennsylvania). U.S. 2,910,815, Nov. 3. A box-closing machine for closing cover flaps extending upwardly from three sides of a box, comprising conveyor means for advancing successive boxes in predetermined, spaced relation.

Carton and Locking Means Therefor, Noble Andre (to Andre-Matic Machinery Co., San Leandro, Calif.). U.S. 2,911,096, Nov. 3. A package comprising a pair of parallel rows of upright cylindrical cans in side-by-side relation and an oblong paperboard blank having spaced, parallel folding creases extending transversely thereacross relative to the length of said blank.

Spout and Cap for a Container, Adam Krautkramer, Budenheim, Germany. U.S. 2,911,128, Nov. 3. In combination with a container having a substantially flat top provided with an opening (the wall of said opening having a depending, relatively short flanged rim), a closure comprising a resilient discharge tubular body, said tubular body having a narrow discharge.

Reinforced Handle Construction for Paperboard Cartons, Orison W. Stone (to Continental Can Co., New York, a corporation of New York). U.S. 2,911,136, Nov. 3. A carton comprising a top panel having extensions folded downwardly to form wall members, a handle adjoining the top panel at a fold line extending across the top panel and flaps adjoining the handle at fold lines.

Apparatus for Molding Containers with Restricted Neck Openings, Leonard D. Soubier (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,911,673, Nov. 10. An apparatus for forming a plastic container having an injection-molded neck joined to a blown body, for communication therewith through a neck opening constricted by an injection-molded diaphragm integral with the neck.

Wrapping Mechanism and Method of Wrapping Articles, Anton Richard Frank and William H. Giles (to Van Buren Machine Corp., Brooklyn, a corporation of New York). U.S. 2,911,774, Nov. 10. A method of packaging an article which consists of superposing a box blank having two sets of laterally projecting tabs on a wrapper sheet and sealing the blank and sheet in a predetermined superposed relation.

Method and Jig for Packaging Vegetables or the Like, Robert K. Schwebs (to Cornell Paperboard Products Co., Milwaukee, a corporation of Wisconsin). U.S. 2,911,775, Nov. 10. A method of packaging articles in a box band, which includes the steps of positioning the band, elevating some of the articles into the band from therebeneath and applying a bottom to the band.

Mechanism for Encircling an Article in a Wrapper, Vincent Pepitone and Walter Luczek (to Package Machinery Co., East Longmeadow, Mass., a corporation of Massachusetts). U.S. 2,911,777, Nov. 10. A wrapping machine having means for advancing articles, with a wrapper draped over the top and extending over and beyond the leading and trailing sides of each article.

Tucking Mechanism for Wrapping Machine, Walter Luczek and Cedric B. Cross (to Package Machinery Co., East Longmeadow, Mass., a corporation of Massachusetts). U.S. 2,911,779, Nov. 10. In a wrapping machine, means for rectilinearly advancing, in uninterrupted fashion and in predetermined spaced relationship, articles encircled by a wrapper extending beyond the article.

Bottom-Seam Squeezer for Paper Cups, William L. Miller (to Continental Can Co., New York, a corporation of New York). U.S. 2,911,890, Nov. 10. In a mechanism for radially squeezing the bottom seams of paper cups, a vertically disposed hollow cylindrical head having a lower end wall formed with a central circular opening to receive the bottom-carrying end of an inverted cup.

Can Carrier, Russell J. Hennessey and Robert M. Dunning (to Waldorf Paper Products Co., Ramsey County, Minn., a corporation of Minnesota). U.S. 2,912,103, Nov. 10. A tandem can carton including a tray, said tray being elongated and including a pair of cans in end-to-end relation.

Package for Cylindrical Articles, Raymond E. Fink (to The New Haven Board & Carton Co., New Haven, a corporation of Connecticut). U.S. 2,912,104, Nov. 10. A package for cylindrical articles such as cans having circumferential beads at their opposite ends, which comprises a row of the articles and a carton enclosing them, the carton having an inner end-wall panel in contact with the articles at one end thereof.

Liner for Container, William R. Taylor (to Diamond Alkali Co., Cleveland, a corporation of Delaware). U.S. 2,912,137, Nov. 10. A re-usable liner for a container, said liner comprising a thin-walled, flexible member having a floor and four upstanding side walls forming a unitary structure which is substantially self-conforming and sealing against the inner walls of the container.

Label Dispenser, Gerald E. Cole (to Kleen-Stik Products, Inc., Chicago, a corporation of Illinois). U.S. 2,912,140, Nov. 10. A device for dispensing labels from a backing strip upon which the labels are mounted with a pressure-sensitive adhesive; said labels being adapted to be peeled away from the backing strip.

Moisture-Retaining Container, Roger L. White (to The Lawrence Paper Co., Lawrence, Kans., a corporation of Kansas). U.S. 2,912,152, Nov. 10. A shipping container for moist products, comprising a carton having spaced side, end, bottom and top walls made of double-face corrugated paperboard waterproofed as to the inner face of each of said walls, said walls providing a storage chamber in each carton.

Folding Paperboard Carton, Donald P. Doran (to Continental Can Co., a corporation of New York). U.S. 2,912,154, Nov. 10. A folding paperboard carton having a tubular body comprising top and bottom panels and side-wall panels, and tubular end walls double hinged to the ends of the top panel.

Method and Apparatus for Packaging Merchandise, Ralph D. Maynard, Jr. (to Washington Steel Products, Inc., Tacoma, a corporation of Washington). U.S. 2,912,805, Nov. 17. A method of packaging which comprises providing a relatively stiff support card having a group of openings therein defining an enclosure area, projecting a barrier means through said openings so as to define a pocket on the upper face of the card, having said enclosure area as its floor.

Carton-Sealing Machine, Paul F. Bowman (to Alford Package Machines, Inc., Bergen, N.J., a corporation of New Jersey). U.S. 2,912,806, Nov. 17. In a carton-sealing machine, a pressure face and an articulated platen forming therebetween a carton throat adapted to receive and apply pressure to a series of cartons being sealed.

Machine for Applying End Closures to Cartons, Paul F. Bowman (to Continental Paper Co., Ridgefield Park, N.J., a corporation of New Jersey). U.S. 2,912,809, Nov. 17. A machine for applying end patches to the ends of tubular, open-end cartons.

Box-Gluing Machine, Walton B. Crane and Edward R. Slate (to Allied Container Corp., San Jose, a corporation of California). U.S. 2,912,908, Nov. 17. A box-forming machine for applying adhesive to and folding end flaps at opposite ends of a container structure including a hingeable top panel.

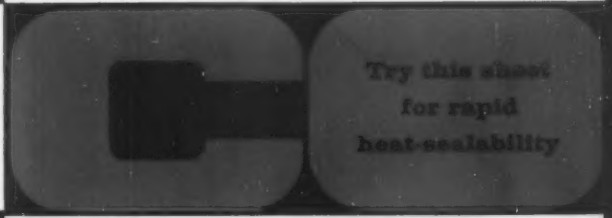
Display Carton, John B. Daily (to Waldorf Paper Products Co., Ramsey County, Minn., a corporation of Minne-

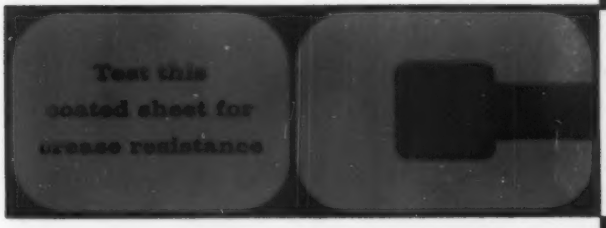
Eastman
low-molecular-weight
polyethylene resin

OTHER RESINS

sion, increase moisture vapor transmissio
resistance, and improve heat-sealability.

You can get additional information and samples of Epolene C by writing Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Kingsport, Tenn.





MAKES CUSTOM-COATING PRACTICAL

Custom runs of Epolene C coated pape
can be delivered economically... and o
short notice, too. Applied direct from
hot-melt to one or both surfaces, coating
of Epolene C can be tailored to the re
quirements of a specific end use by mod
ification with other resins.

HEAT-SEALS FAST

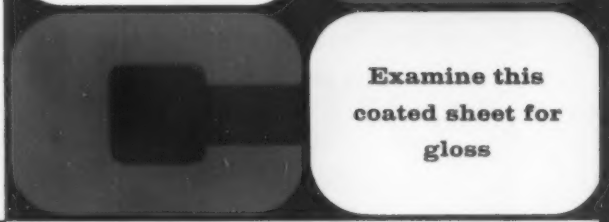
Face-to-face or face-to-back, Epolene C permits faster sealing cycles at lower temperatures than can be achieved with other polyethylene resins. Dwell times of less than ¼ second are obtainable. You can heat-seal to polyethylene flexible packaging without melting the film.

LEAVES NO UNCOATED AREA

With Epolene C, you can coat right up to the edge of the stock as no gripper is involved, unlike polyethylene coatings applied by the extrusion-laminating process. No trimming is necessary to obtain a bleed coating.

Epolene C

Eastman
low-molecular-weight
polyethylene resin



Examine this coated sheet for gloss

Epolene C

Eastman
low-molecular-weight
polyethylene resin

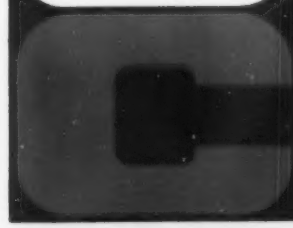
WIDE CHOICE OF STOCK

With Epolene C, it is possible to coat vi
tually any web-fed stock from a hot mel
including paper, paper board, foil, clo
and cellophane.

Test this sheet for moisture-vapor transmission

EXCELLENT ADHESION

Properly modified, Epolene C coatings exhibit excellent adhesion to a wide variety of materials. Try pulling this coating off with cellophane tape and you will find the paper, not the coating, fails.



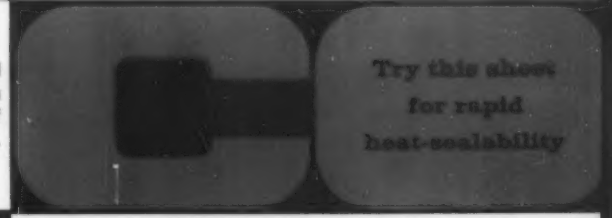
Epolene C

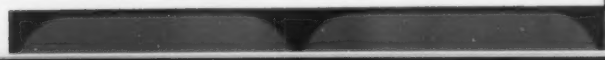
Eastman
low-molecular-weight
polyethylene resin

COMPATIBLE WITH OTHER RESINS

Epolene C can be modified with a varie
of resins to reduce costs, increase adh
sion, increase moisture vapor transmissi
resistance, and improve heat-sealability

You can get additional information and samples of Epolene C by writing Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Kingsport, Tenn.





Custom runs of Epolene C coated pap

April in Paris

That's when
HOLWEG PREMIERES ITS NEW MACHINES *at the Paris Graphic Arts Show*
April 29 to May 8!

Attend this International Exhibit and see Holweg's new equipment:
1—Bag-Making machines for polyethylene, paper, and cellophane.
2—Gravure presses for both publication and converting trades.
3—Flexographic presses, both stack and central impression cylinder.

For full particulars of the Paris Show, contact—

CONAPAC
CORPORATION

Division of Roto American Corp.
Exclusive U. S. Distributor of
HOLWEG machines
120 East 13th Street
New York 13, N. Y.
SPring 7-6150

Patents [*Continued*]

sota). U.S. 2,913,101, Nov 17. A display carton including a tubular body having a front wall, a rear wall and parallel side walls connected to each other in tubular relation.

Container Cover, Robert P. Vuillemenot (to The Procter & Gamble Co., Cincinnati, a corporation of Ohio). U.S. 2,913,140, Nov. 17. In combination, a flexible cover for a rigid container comprising a dished-down central portion having a hand grip projecting upwardly therein, said hand grip having two side walls and a top wall.

Protective Cigarette Package, Raymond E. Jacke (to Reynolds Metals Co., Richmond, Va., a corporation of Delaware). U.S. 2,913,165, Nov. 17. A protective package comprising in combination: a stiff, parallelpiped-shaped, open-top container member having a first side wall, a second side wall, end walls and a bottom panel attached to each of said walls.

Multiple Packages, Neil Macneale (to The Procter & Gamble Co., Cincinnati, a corporation of Ohio). U.S. 2,913,861, Nov. 24. A process of making multiple-compartment containers, including the steps of medially folding a web of flexible material so as to give superposed webs which form opposite outside walls of the container.

Machine for Forming and Filling Foil Packets, Reinhardt N. Sabee (to Circle Machinery & Supply Co., Appleton, Wis., a corporation of Wisconsin). U.S. 2,913,862, Nov. 24. A packaging machine comprising, in combination: means for feeding and medially folding a first web of sheet material, means for interposing therebetween and feeding a second web of sheet material and means for sealing said webs to form a row of double-compartment packets having a common central wall.

Machine for Forming Edge-Seal Closures on Bags, John D. Sylvester, Edwin E. Messmer and John D. Keenen, Jr. (to Amsco Packaging Machinery, Inc., Long Island City, a corporation of New York). U.S. 2,913,863, Nov. 24. In a heat-sealing machine adapted to form an edge-seal closure on a heat-sealable bag containing merchandise, a heat-applying means comprising a pair of tangentially arranged rollers, one of which has a heated attenuated edge.

Package-Stacking and Sealing Mechanism, Clarence J. Malhiot (to F. B. Redington Co., Bellwood, Ill., a corporation of Delaware). U.S. 2,913,864, Nov. 24. In an apparatus for sealing the folded ends of package wrappers to which adhesive has been applied, a pair of endless traveling belts arranged in parallelism to provide a sealing channel having a receiving end through which the packages are conducted.

Manufacture of Bags, Wilfred E. Stageberg (to Bemis Bro. Bag Co., St. Louis, a corporation of Missouri). U.S. 2,913,966, Nov 24. The method of forming gusseted tubing from a web of heat-sealable sheet material, comprising continuous feeding of the web and folding the web on lines extending longitudinally of the web and located intermediate the side edges of the web to form it into a doubled web.

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$25,000 grant by AMA

The American Management Assn. has announced the award of a $25,000 grant to Rensselaer Polytechnic Institute, Troy, N. Y., for research study in the field of packaging management. The grant will be drawn from the Fund for the Advancement of Packaging set up by AMA through its National Packaging Exposition Exhibitors' Advisory Committee. Funds are derived from registration receipts at AMA's annual National Packaging Exposition.

The grant will be used by RPI to study the organization of packaging in a representative sample of industries to determine what organizational characteristics lead to success. The research will cover both the organizational placement of packaging—responsibility, authority and communication procedures—as well as the characteristics of packaging personnel.

The first grant, made following the 1958 Packaging Exposition, was awarded to Dr. Spencer A. Larsen of Wayne State University for a study entitled "Packaging Research: An Inventory," which was published last April. ●

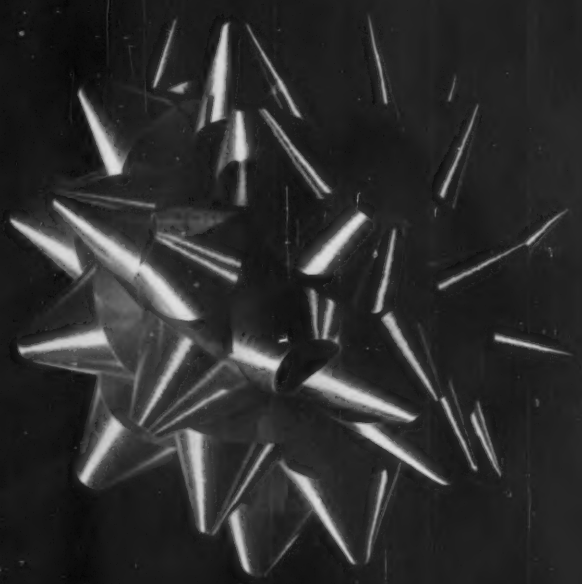
Interpack–April 20-27

Interpack 1960—the International Packaging Exhibition and Display of Confectionery Machinery at Dusseldorf April 20-27—is expected to open with about twice the display space and almost twice the number of exhibitors than at the first Interpack in 1958.

More than 370 exhibitors are already listed—25% of them from outside Germany. This compares with a total of 255 two years ago. American, Belgian, French, British, Italian, Dutch, Scandinavian and Swiss firms will be represented.

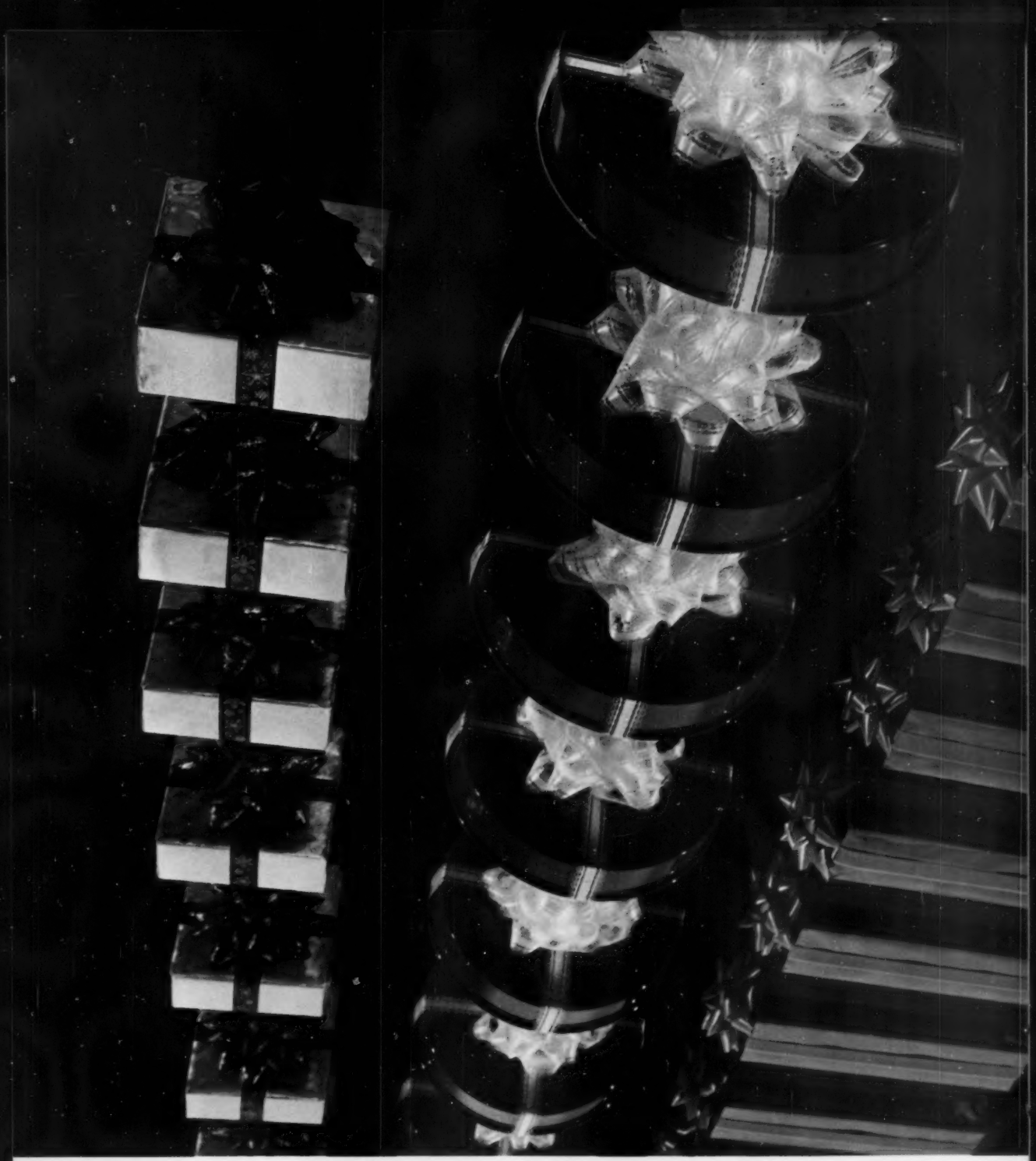
As far as practical, exhibits will be grouped by categories of packaging materials, machinery, other equipment and services to satisfy the specialized interests of many visitors. The confectionery-machinery display will include packaging equipment for that trade.

Opening on the same day (April 20-23) in the same city will be the European Packaging Federation's Annual Symposium and Exposition. ●



Shoot Christmas sales sky-high with

"Sasheen" Star Bows



Display a burst of color and beauty! No matter what your product, now you can

pre-gift-wrap it

Do yourself a profitable favor by making your product irresistible at Christmas. Transform it into a gift that's ready to give by pre-gift-wrapping with a SASHEEN Star Bow. It's a shrewd new merchandising idea that can now be put to work for virtually any product . . . candy or candlesticks, apparel or small appliances, bottled ware or dinnerware. You name it.

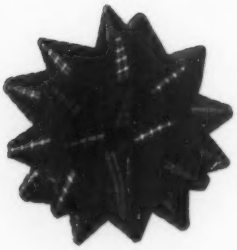
The new SASHEEN Star Bow is the most exquisitely different bow ever conceived. Its brilliant multi-points stay perky and perfect on the shelf or in your display. A special plastic pin holds

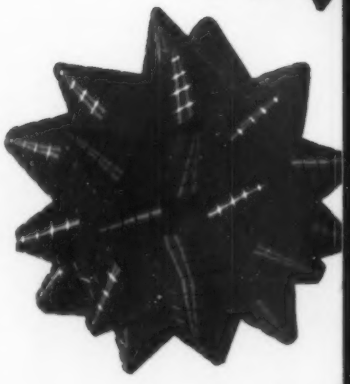
for more sales!

the bow together *and* lets you "pop" the bow onto the package.

Obviously, mass-production gift-wrapping is fast and sure with SASHEEN Star Bows. (Other bow styles, too, in both gleaming SASHEEN® BRAND Ribbon and lacy DECORETTE® BRAND Ribbon.) All you need is the wonder bow-tying machine of the century—the S-71 Bow Maker. Expensive? Turn the page!

You choose from
a galaxy of 58 glorious colors and patterns





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S-71 BOW MAKER

Leases for as little as $4 a month!

Yes, on a two-year basis you lease the S-71 Bow Maker for an average of $4.00 a month. Just $72.00 rental the first year, $24.00 renewal for the second year.

Rental is low, sales results can be sky-high. With this machine you realize further savings because it's so fast and requires no skilled help. You get completed Star Bows in seconds flat. Just turn the crank and snip the bow off the reel. The machine even "pins" the bow together. This same pin speeds wrapping. It pops on your gift-wrapped package and the bow is attached. Truly—mass production of beauty is a reality!

What's more – the 3M Engineering and Design Service is ready to help you solve your individual pre-gift-wrapping problems. Ask for a free demonstration of the S-71 Bow Maker right now by mailing the coupon below. Transform your products into beautiful pre-gift-wrapped packages. Put them into orbit and watch Christmas sales soar.

WRITE TO: Gift Wrap and Fabric Division, 3M Company, Dept. GAU-20, St. Paul 6, Minnesota.

Please have your representative make an appointment to demonstrate Star Bow production on the SASHEEN S-71 Bow Maker.

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3M COMPANY

Sounding Board

[*Continued from page 59*]

clean-up difficulties due to product differences."

It is quite apparent from the reports made to us that we must continue to operate a manual packaging line in our particular field.

We have reached the conclusion that we must help ourselves and have worked out manual packaging methods utilizing time and motion studies made by our industrial engineering department. Our aim, naturally, has been toward eliminating wasted motion, inefficient arrangements and practices.

Many of our manual packaging-method changes have come about through the surveys made by the machinery people. Our experience with the machinery people has not given us the "all-out" mechanization we desire, but these contacts have made us acutely aware that our competition is faced with the same daily problems and if we are to stay competitive, we must help ourselves.

Robert W. Carter
Director of Mfg.
Alcon Laboratories
Fort Worth, Tex.

We, in our organization, lean toward large, single-unit machines capable of large-volume production, building in maximum machine flexibility at time of selection. Experience with slow-speed, along with high-speed machines spotlights the fact that enough of the slow-speed machines, to achieve the same unit volume, require more floor space, operator man hours, maintenance and change-over time and, in many cases, larger capital investment. Using this approach however, may necessitate adopting the concept of selling what can be produced as opposed to producing what can be sold.

J. M. Hohn, *President, Frontier Chemical Products, Inc., St. Louis:* In our business which is devoted exclusively to private-formula work, we desire the multi-units which allow us to change quickly from one product to another. Another reason why we like multi-units is that our help does not have to be as highly skilled as with larger equipment. ●

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either makes money or wastes it

Readable, attractive marking made by Markem machines on your boxes or labels helps them from the moment they're marked to the time they're used — and can even help future sales as well. Good marking speeds handling . . . reduces waste and packing errors . . . allows quick selection by customers . . . simplifies and encourages reordering . . . carries the "quality" message of modern package design.

In contrast — *hard-to-read, uneven, "home-made" marking is a hindrance to your package or product from beginning to end* — and can actually waste thousands of dollars a year.

And a Markem marking method makes important "in-plant" savings as well. The right Markem machine, type and specialty ink working in your plant marks the *right* quantities at the right time — with savings in inventory, labor and delivery time . . . eliminates waste from obsolescence . . . handles "short runs" rapidly and economically . . . provides flexibility that allows *one machine to do a variety of marking jobs.*

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The F&DA deadline

[*Continued from page 114*]

producers of polyethylene resin have banded together under the chairmanship of a leading food-research consultant to study exhaustively the number and composition of lower-order polymers in polyethylene that may migrate to fatty foods—originally cited by F&DA as a suspect area. In December this group presented a mass of data to F&DA. And while the agency has not yet taken an official position on it—indeed, F&DA has asked for additional data on certain points—industry men are confident that this research will soon win universal clearance for polyethylene for packaging all foods. Customers have been so advised.

The likely outcome is agreement with F&DA on specifications for a "food grade" of polyethylene. The same classification may very well be established for other materials having both food and non-food uses.

An unusual approach was attempted by the Packaging Institute, which sent a committee to Washington late in December to appeal for a blanket extension on all packaging materials not cleared by March 5. While it is unlikely that the Government will grant any blanket extensions, Secretary of Health, Education and Welfare, Arthur S. Flemming, has acknowledged the need for further time on some problem packaging materials and has published the requirements for an appeal (printed in the *Federal Register*, Dec. 31, 1959). While F&DA suggests that appeals be filed before Feb. 1 for timely action, the law permits application for extensions up to March 6. Here are the major requirements:

1. Name and chemical composition of the chemical or packaging material requiring extension.

2. Evidence of chronic toxicity of the material to indicate that its interim use will not jeopardize the public health.

3. Food applications for which the chemical or material is intended and evidence that these uses were recognized prior to Jan. 1, 1958. Also data on the physical and technical effect of the compound on such foods and the quantity needed to produce such an effect.

4. Amount of migrant chemicals expected to transfer to the foods.

5. Why a petition for a food-additive regulation has not been submitted prior to the request for a test extension.

At the same time, F&DA's Assistant General Counsel, William W. Goodrich, clarified the Government's viewpoint on guarantees. Admitting that distributors of packaged foods would be protected from criminal prosecution—though not from seizure or injunction—by a valid guarantee from materials makers, the Federal lawyer nevertheless cited court decisions to prove that "a guarantee for a package containing a migratory substance of questionable toxicity loses all legal significance when this package is put to its intended use in food packaging."

In other words, the man who puts the food in the package must in the end be responsible for its safety. He must assure himself, by reference to published lists, that any chemical additives used have been cleared. The F&DA counsel does concede, however, that a guarantee held in good faith might carry weight in court and many packagers are insisting on supplier guarantees. ●

Plastics volume up 9% in 1959

Total production of plastics in 1959 reached a whopping 5.5 billion pounds, with packaging-field applications accounting for a big portion of the volume, *Modern Plastics* magazine reported in its January issue. The 1959 figure represents an increase of 500 million pounds (9.1%) from 1958, with even greater growth forecast for 1960.

According to the magazine, production of two types of plastic much used in packaging (polyethylene and vinyls, including acetate and saran) topped the billion-pound mark last year for the first time. The figure for polyethylene was 1,080 million pounds; vinyls were right behind at 1,060 million.

Total 1959 production figures for other plastics, as reported by the publication, were (in millions of pounds): polystyrene, 890; phenolics, 604; urea and melamine, 384; cellulosics, 152, and polyesters, 140. The remainder of the total was accounted for by epoxies and miscellaneous plastics. ●

Package materials prices for 1960

First 1960 price changes reveal increases for two basic packaging materials—aluminum ingot and tinplate cans—and a surprise cut in polyethylene resin.

Low-density polyethylene, continuing its downward price curve, was recently dropped 2½ cents per pound, first by Union Carbide Plastics and then by other major producers, a move that caught extruders and converters off base and resulted in hasty cancellation of scheduled increases in film prices. So far no decreases have been announced in converted film.

While no immediate increase in tinplate has been announced by the steel companies, both American and Continental Can have reversed the price war in cans that started in late 1958 and have announced selective price boosts on some containers. Recent union contracts for both steel and can companies are regarded as making general price increases for both raw tinplate and finished cans inevitable. However, American Can reports that its new quotations are still well below the price levels that prevailed before November, 1958. "The policy of pricing each type of container equitably on the basis of costs is being continued," the company explained. In 1959 this policy resulted in substantial reductions in many container prices."

While any increase in steel-plate prices would normally favor use of aluminum in metal containers, the aluminum industry has had to face a price boost of its own—up to 1.3 cents per pound on domestic ingots—which is expected to affect adversely the use of this metal in rigid containers. First to jump was Aluminum, Ltd., which raised the price on ingots sold outside the U.S. by ¾ cent, to 23¼ cents per pound. Aluminum Co. of America then hiked the price of domestic pig by 2 cents, to 26 cents per pound—erasing the 2-cent price drop achieved in mid-1957. Both Reynolds and Kaiser are said also to be studying price increases. ●

Victory for radiation sterilization

[*Continued from page 101*]

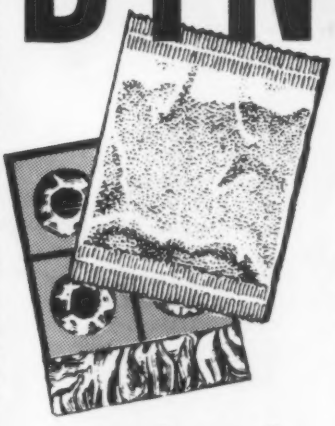
nel that prevents escape of radiation. They are passed under the beam of high-energy electrons, which penetrate the foil pouches and destroy all bacteria, even bacterial spores, which are the most resistant form of microorganism.

The operator watches the movement of trays on a closed-circuit monitor screen outside the sterilization room. As an interesting sidelight, this type of sterilization maintains the tensile strength of the suture at a minimum of 10% more than the sutures which have been processed with heat.

Briefly, the technical process of generating the intense beam of ionizing radiation is as follows†: a burst of radio-frequency energy is initiated in a pair of micro-wave tubes, called klystrons. This action is trig-

†For complete technical details, see "Sterilizing with Electrons," MODERN PACKAGING, July, 1951, p. 105.

DYN



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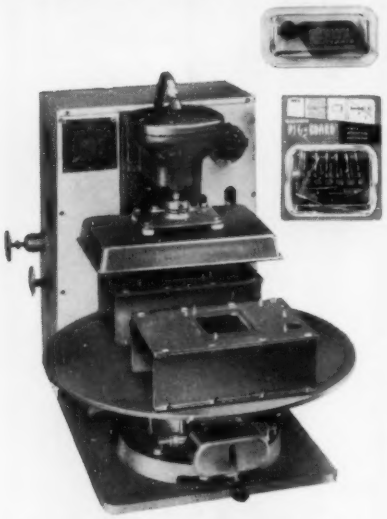

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gered by a gaseous electron switch, called a thyratron. The radio-frequency energy is then fed into a vertical, high-vacuum accelerator tube. At the top of this chamber, a surge of electrons is generated from a wire filament and timed to coincide with the wave of high-frequency energy. The electrons, trapped in the wave of energy, are gradually accelerated to the speed of the wave and hurtle downward through the vacuum tube at a rate approaching that of light. Reaching maximum velocity at the bottom of the tube, the stream of electrons is fanned out by a magnetic field and leaves the tube through an aluminum foil "window" that is thick enough to preserve the high vacuum in the tube, yet thin enough to pass the electrons without significantly reducing their speed.

Though the mass of electrons is small, their tremendous speed gives them enormous energy. The tiny particles penetrate the package; some are stopped by the product—where their energy is transformed into a force that destroys microorganisms. While stray electrons have a limited range of penetration, gamma rays are generated when the electrons strike metal conveyor or equipment surfaces—thus necessitating the subterranean location and heavy shielding of the target area for protection of personnel during periods when the electron units are operating. There is no danger at any other time, since there is no residual radioactivity produced in any object and there is no hazard when the units are not operating, the company says.

Returning on a conveyor, to the packaging department, the trays are momentarily stopped while a dosimeter film, located under the packets at the bottom of each tray, is removed and quickly developed to prove that the packets have had a sterilizing dose of radiation. Before final packaging, trays of packets are placed in racks and samples are examined for sterility according to U. S. Pharmacopeia requirements.

To complete the job, the sutures are moved to a packing line, where the glass outer package is vacuum cleaned on a rotary unit, packed with either one- or three-dozen packets and filled with the formaldehyde-alcohol solution. Filling and capping are conducted on automatic rotary equipment, after which the jars are labeled on a semi-automatic machine. A labeled, single-jar, corrugated carton completes the package.

This trail-blazing volume process of electron sterilization—and the innovations in packaging that have stemmed from its use—encourage radiation experts and packagers to hope that this technique can be used in other specialized areas of pharmaceutical packaging. ●

Tilt-fill to cut foaming of product

[*Continued from page 111*]

The cartons, which measure 2¾ in. wide, are designed to provide a broad display surface and prevent in-store pilferage. But these packages also pose a handling problem, since the bottle is only 1¼ in. wide and must be held in place by narrow internal dividers built into the carton. The solution lies in extremely accurate timing and adjustment of both carton and bottle buckets in the cartoner, with an extra assist from special pointed tabs on the carton dividers that help guide the bottles into place.

Final packaging steps are bundling of the cartoned deodorants in dozens and providing a special opening device in the kraft paper wrapper to meet demands by retailers for ease in price marking. Comprising a hand-size, die-cut tab and perforated strip, this easy opener is applied to the imprinted paper web on the bundling machine before the wrapping operation. Twin serrated, circular knives apply two perforated lines; a curved, rotary knife cuts the tab between the perforations. When pulled open to both sides, this strip exposes price spots on the tops of all cartons in the package.

While the unusual filler and its associated equipment were specifically built for the Bristol-Myers operation, the increased use of roll-on packages in other product fields should create considerable interest in this integrated packaging set-up. Further, the principle of tilted filling provides a fresh, efficient approach to the problem of handling viscous, foaming liquids and could find many applications in both food and non-food packaging. ●

Money in the can

The "secret ingredient" in several brands of coffee is real money—packaged coins you can actually get your hands on.

Take, for instance, the North Woods Coffee Co., Chicago. In

Skin-packaged coins give coffee customers a 7-cent rebate.

720,000 cans of its egg coffee, the company has included a skin-packaged card bearing seven cents in nickels and pennies plus a printed reminder that "we spend at least 7¢ extra on every pound . . . to give you a better cup of coffee."

The idea of giving away $50,400 in cold cash was easier in conception than execution. At the supplier's plant, cards were printed in green ink, 24 up on 14-by-20-in. food-grade board. Then a nickel, flanked by two pennies, was properly positioned on the ganged-up cards. But manual and machine-drop methods were ruled out because the coins bounced.

This problem was solved by a unique arrangement of coin magazines similar to but longer and holding more coins than standard coin changers. Seventy-two magazines were placed so they would position the coins precisely and automatically. Covered next with a sheet of polyethylene, the ganged-up cards were heated and a vacuum pulled to complete the skin packaging. Individual cards were then cut apart and cartoned for shipment to the coffee packer's plant where they were manually placed into empty coffee cans prior to product filling.

Problems of security against theft and Government approval to ship currency were worked out jointly by the supplier and packager.

SUPPLIES AND SERVICES: Cards printed and skin packaged by Leedpak, Inc., 294 Fifth Ave., New York 1.

DEPENDABLE has the machine you need for your . . .

SCREEN PROCESS PRINTING

Units for all types and sizes of containers—from vials to 55-gallon drums. Dependable Machines print on plastic, glass, ceramics, metal, etc.

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How To Get New Ideas For Cost Reduction

You can't know about new developments not yet in print. Yet they are basic to new cost-reduction ideas.

You get such data, valuable for original thinking and to your firm, at the Industrial Management Center's 2-week course in Packaging.★ Small classes led by 15 experts review new concepts and equipment, discuss applications, and evaluate methods for instituting new programs.

These courses ARE effective. Many firms send responsible top men yearly.

Enrollment is limited. Personnel must be qualified for advanced training.

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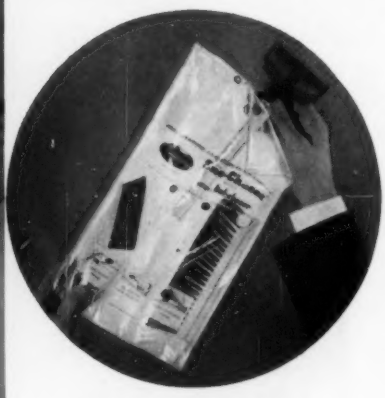

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Gift packaging

[*Continued from page 83*]

of box coverings by reviving old embossing rollers, but printing them in new color combinations. In this way, the firm is getting distinctive designs without the cost of new custom-design cylinders.

Leading department stores and retail chains continue to set the pace in each city on retail gift-box practice. There appears to be greater interest in distinctive designs, whether the decorative papers are applied as tight wraps to set-up boxes or laminated to board for folding boxes. The themes may be pictorials, symbolizing well-known local scenes, but more frequently they are stylized motifs in special colors that instantly identify the wrap with a particular store. Savings are made by skillful use of fewer colors, yet creating striking multicolor effects. Colors are sometimes changed for seasonal promotions using the same design.

In household-textile departments, one begins to wonder what's happened to the distinctive packaging ideas formerly applied to such products. Textile manufacturers have been listening so long to retailers' requests for large, flat rectangular gift boxes that, except for color and graphic treatments, packages for all brands are beginning to look alike. Virtually all of the novelty shapes—the rounds, the octagonals, the drawer constructions—have disappeared in favor of the standard flats.

Toy packaging, thanks to continued retailer requests, reveals consistently better constructions and improved graphic treatments, with efficient pre-packs to speed the transaction of items that can be sold from samples. But again, real originality is hard to find. Most significant, perhaps, is the use of metal-end fibre cans with tear-string openings that offer good display potentials for blocks, construction toys and games, and that are convenient as sturdy re-use storage containers in the home. Toy manufacturers are asking more frequently whether it is feasible to use a transparent bag or box. The answer, according to two leaders who use both for similar toys, is a seeming preference for bags when the toy is purchased simply as an impulse item by Mama for her own children, but a box—either folding or set-up

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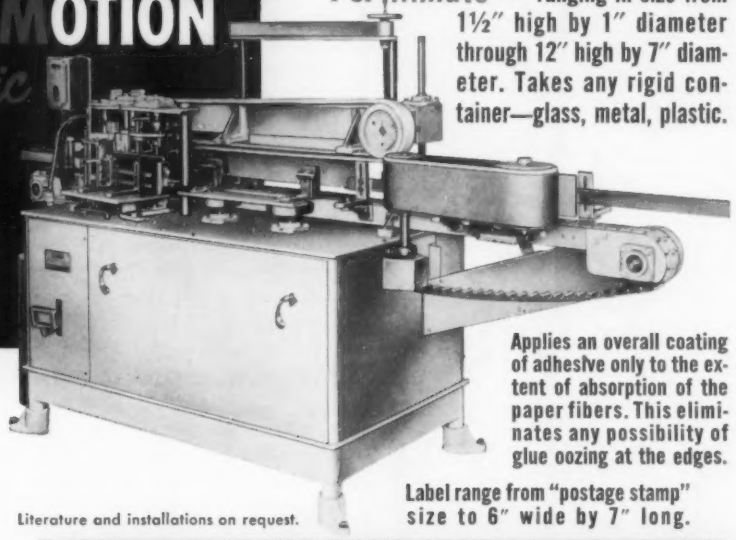

Up to 150 containers Per Minute — ranging in size from 1½″ high by 1″ diameter through 12″ high by 7″ diameter. Takes any rigid container—glass, metal, plastic.

Applies an overall coating of adhesive only to the extent of absorption of the paper fibers. This eliminates any possibility of glue oozing at the edges.

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has the ability and facilities to help you, with:

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It starts with the "man you meet" from Tower. He works for you. He's in complete control of your job—from idea to finished product. You benefit with faster service. Less costs, too.

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Real specialists with years of experience in exchanging sales-minded problems into sales-stimulating packages—and products. A considerable wealth of talent always available for your free council.

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construction—that is more impressive and convenient for decorative wrapping when the item is purchased as a gift.

Nowhere in this world is there such a wealth of materials and techniques ready for inspired interpretation by the creative designer as in these United States. Facilities range from machines that make bows automatically to remarkable new tough stretchable transparent films that give trim appearance and sturdiness to wrapped baskets of foods, confections and cosmetics. But are these glamorous aids taken so much for granted that they are not being used to fullest advantage?

A significant comment applicable to this situation is made in a recent issue of *Display World* by Rosa Maria Lutzenberger, a Brazilian designer visiting this country. What would American display artists do, she wonders, if they were limited to paper and paperboard, wire and paints? Americans are "pampered" by availability of so many ready-made props and accessories, she says. And she may be dead right. It's something to think about when planning 1960 gift packaging. ●

Eleven aerosols win 1959 CSMA awards

Avoset Co.'s "Quip" dessert topping received the grand award as the most attractively designed aerosol package in the competition held recently by the Chemical Specialties Mfrs. Assn. Announcement of the awards was made at the 46th CSMA annual meeting in Washington, D.C.

Winning packages in CSMA's 1959 aerosol competition.

Other winners are: *Medicinal-pharmaceutical*, "Burn Spray," Rexall Drug Co. *Shave products*, "Yardley Shaving Foam," Yardley of London, Inc. *Room deodorants*, "Wizard Room Deodorizer," American Home Products Corp. *Insecticides, repellents, mothproofers*, "Target Insect Killer," Rexall Drug Co. *Paints, enamels, other protective coatings and paint removers*, "Craftint Gold Enamel Spray," Craftint Mfg. Co. *Food products*, "Quip," Avoset Co. *Industrial products*, "Plasti-Kote Rust Solvent," Plasti-Kote, Inc. *Miscellaneous household products*, "Lenk Charcoal Lighter," Lenk Mfg. Co. *Hair preparations*, "Cort Spray and Wave," Cort Cosmetics, Inc. *Miscellaneous personal products*, "Tan 'n Ban," Standard Oil Co. (Ohio). *Perfumes, colognes, toilet waters*, "Oh La La Eau de Parfum," Parfum Ciro, Inc.

Rapid advances for the aerosol were predicted by the various speakers who addressed the Aerosol Division of CSMA. In the next 10 years, four times as many non-food aerosols—about eight billion—will be produced and sold as in the '50s, according to a report prepared by Ralph Crane of Du Pont's "Freon" Products Div. Food products, which now represent less than 20% of the total pressure-package market, may become the largest growth area in the next decade, he believes.

James Peckham, executive vice president, A. C. Nielsen Co., said that aerosols would make further major penetration into various product markets. Among the promising candidates for aerosol growth are shampoos, hair preparations, general-purpose household cleansers and furniture polishes. There is a potential for 600 million units in these product categories, according to Mr. Peckham, and 30% of this potential might go into aerosols [*Continued on page 182*]

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EQUIPMENT • SUPPLIES • SERVICES

ELECTRICALLY HEATED DRAW PRESS. Illustrated 6-page folder gives general description of press for drawing and trimming round and oval corners from thermoplastic sheet material. Specifications and prices. Taber Instrument Corporation. **(B-050)**

POUCH-IN-CARTON PACKAGE WITH OVERWRAP. 4-page illustrated broadside describes features of pouches, made of 25-lb. polyethylene-coated paper, and waxed overwrap. Specification data. Western Waxide Div., Crown Zellerbach Corporation. **(B-051)**

PAPER BOXES AND LABELS. Illustrated 6-page catalog describes wide line of stock round and rectangular set-up paper boxes, including telescope, slide, hinged and shoulder types. Specification data. Prices. E. N. Rowell Co. **(B-052)**

COMPACT, FLEXOGRAPHIC PRINTING PRESS. Catalog sheet describes features of small press built for heavy-duty production printing on paper, board or film. Specification data. Design and Equipment Co. **(B-053)**

PROPRIETARY PLASTIC PRODUCTS. 32-page illustrated catalog describes lines of plastic products for science and industry, such as instrument dust covers, protective medical garments, dust covers, bottles, dispensers, etc. Specifications, prices. Bel-Art Products. **(B-054)**

PACKAGING MACHINERY. 10-page file data brochure gives catalog descriptions of machinery and conversion units, for product filling and package sealing, etc. Saga Packaging Machinery Division, A & M Tool and Die Co. **(B-055)**

GUMMED TAPE SEALER. 4-page illustrated folder describes semi-automatic tape measuring, dispensing and sealing machine for application to corrugated boxes. Specification data. Better Packages, Inc. **(B-056)**

AUTOMATIC EDGE GUIDE. Illustrated bulletin sheet describes an automatic edge guide controlled by photocell or hydraulic or air web guide, and/or constant-tension control. John Dusenbery Co., Inc. **(B-057)**

AUTOMATIC MOLD WIPER. 4-page folder describes features of wiper that strips molds of ejected molded parts, sprues and runners in synchronization with machine cycle—and is adaptable to all injection molding machines. Berner Tool & Die, Inc. **(B-058)**

DIVERSIFIED MERCHANDISING SERVICE. 8-page folder outlines diversity of services offered to customers in packaging field. Paper Division makes specialty products for consumer and converter. Custom Packaging or private label. Printing for automatic packaging. Machine labels. Printing machinery and equipment. Leedpak, Inc. **(B-059)**

WRAPPING MACHINES. 12-page data file folder illustrated in color, describes various machines designed to wrap confections, candy bars, coins, biscuits, soaps, cigarettes and containers, etc. Supermatic Packaging Corp. **(B-060)**

WEB SPLICERS. One-page file sheet describes line of automatic splicers to be used in conjunction with various types of packing machinery. Butler Automatic Machine, Inc. **(B-061)**

DOUBLE-COATED TAPE. 6-page illustrated folder shows application of double-coated, pressure-sensitive tape to various industrial needs and uses. Adhesive on both sides of tape. Data specifications. Minnesota Mining & Mfg. Co. **(B-062)**

SKIN PACKAGER. 4-page colored folder describes a machine designed to put skin wraps on merchandise suited to syndicate store and rack merchandiser. Adaptable to blister or bubble fabrication with male and female molds. Skin-Pak Machinery Co., Inc. **(B-063)**

CANDY POP WRAPPER. 9-page illustrated file data brochure describes unit packaging machines and conveyor feeds. Wraps liquids or solids. Wrap-Ade Machine Co., Inc. **(B-064)**

SLITTER-REWINDER. 4-page illustrated folder describes machine suited to converters which run off caliper materials, including papers, flexible and rigid plastic film, foils and laminates. Slits and rewinds at high speeds. Cameron Machine Co. **(B-065)**

ROTARY PRESS. One-page illustrated catalog sheet describes press that bonds glued materials such as metal to wood, cloth to paper, and cloth to leather, cork to fibre, etc. Pressure adjustable to accommodate materials of varying thickness. Potdevin Machine Co. **(B-066)**

UNIT PACKAGING. 6-page illustrated data sheets describe rotary-wrapping, continuous motion, automatic packaging machine that makes, fills and seals containers from various types of flexible materials. Conapac Corp. **(B-067)**

CARTON GLUE-SEALER 16-page illustrated folder describes various machines designed to "tuck-in" ends, seal cartons of assorted shapes and sizes. Container Equipment Corporation. **(B-068)**

TABLET COUNTER, DUST REMOVER. Two catalog pages, illustrated, describe two machines. One removes chips, dust and other foreign material from uncoated tablets prior to packaging. Another is an electronic tablet or capsule counter. Specifications. Lakso Co., Inc. **(B-069)**

COATED CARTONS. 8-page colored folder describes machine which renders carton-interiors non-corrosive for products made of ferrous metals. Specifications. Robertson Paper Box Co., Inc. **(B-070)**

VACUUM AND PRESSURE FORMING EQUIPMENT. Seven illustrated catalog and specification sheets describe nine thermo forming machines for packaging and forming products from ¾ in. diameter to 6 ft.x12.5 ft. Auto-Vac Co., Div. of National Cleveland Corp. **(B-071)**

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BLOW MOLDING EQUIPMENT. Illustrated 4-page brochure lists specifications and describes components and operations of blow-molding machines with production capacities to 450 lbs. of material per hr. Auto-Blow Corp. A subsidiary of National Cleveland Corp. (B-072)

CUSTOM-FORMULATED ADHESIVES. Illustrated 8-page brochure discusses the compositions and general characteristics of a number of individually-formulated adhesives as applied in packaging and other industrial uses. Interchemical Corporation, Finishes Division. (B-073)

EDGE GLUERS AND CEMENTERS. 10-page folder describes machine that applies edge-gumming and cementing of paper sheets, labels, book inserts, and advertising stickers, etc. Specifications. Schaefer Machine Co., Inc. (B-074)

GUMMED TAPE SEALERS. 28-page illustrated brochure with catalog pages describes both manual and electrically-operated packaging tape and label dispensing and sealing machines. Specifications, data. Derby Sealers, Inc. (B-075)

LIQUID FILLING MACHINES. 8-page, color-illustrated folder describes line of fully-automatic and semi-automatic, high-speed filling machines. Fills foamy and still liquids, such as vinegars, chemicals, syrups, foods, etc. MRM Co., Inc. (B-076)

CODING, PRICING, IMPRINTING MACHINERY. 8-page illustrated folder describes machinery for high speed printing on cartons, multi-wall bags, containers. Prints on any surface with minor surface variations. Specifications, data. Industrial Marking Equipment. (B-077)

MULTIPLE SPEED COUNTER & PACKER. 3-page broadside describes and illustrates machine for counting and filling a pre-determined number of small units of uniform size and shape. Specifications. Fairchild's, Inc. (B-078)

ADHESIVES APPLICATORS. 16-page illustrated catalog describes machinery applicators of cord-like hot melt adhesive to such things as bags and folded box making, carton closing, etc. Specifications, data. United Shoe Machinery Corp. (B-079)

MULTI-PURPOSE DUMPERS. 8-page illustrated brochure describes machinery that slits all standard and special containers and dumps all free-flowing bulk material into any type receptacle. Data. Essex Conveyors, Inc. (B-080)

BASIS WEIGHT SCALES. 2-page data sheet illustrates and describes various types of quadrant scales of pendulum type with jewel or steel bearings. These are paper desk, portable, bundle, and special purpose type scales. Testing Machines, Inc. (B-081)

RESEARCH DEVELOPMENT AND TESTING SERVICE. 12-page booklet describes services of organization set up to assist manufacturers in the chemical, bacteriological, engineering, market-research and related fields. Foster D. Snell, Inc. (B-082)

LABELS AND TAGS. 4-page, illustrated color folder describes a design and printing service, featuring tags, labels and merchandise cards printed in 4 color for point of purchase. Dennison Mfg. (B-083)

LIFT TABLES. 4-page illustrated color folder describes features of tables designed to lift heavy objects such as mill rolls, machine parts, etc. Specifications and data. The Clark-Aiken Co. (B-084)

CASE GLUERS AND COMPRESSION UNITS. 4-page, illustrated folder describes machinery designed to automatically compress and glue packing cases. Specifications, data. Crompton & Knowles Packaging Corp. (B-085)

INFRA RED DRYING PROCESS. 11-page illustrated booklet describes equipment designed for the quick drying of prints, lacquers, coatings on paper, film, foil, fabrics, etc., in the converter industry. Specifications. Data. Comac Engineering. (B-086)

PLANT AND WAREHOUSE TRUCKS. 4-page, illustrated folder describes various trucks and trailers designed for the movement of stocks in and out of plant or warehouse. Data. Palmer-Shile Co. (B-087)

TRANSPARENT LABELS, DISPLAYS. 4-page folder describes a display service featuring a variety of printed transparent, self-sticking plastic signs, displays and product labels. Goodren Products Corp. (B-088)

TRANSPARENT, FLEXIBLE PACKAGING SHEET GUIDE. 6-page folder gives recommended sheet sizes for packagers (at the store level) using sheet cellophane, to reduce waste and improve package appearance. Specifications. Data. E. I. du Pont. (B-089)

AUTOMATIC CHECK WEIGHERS. 11 catalog pages describe machines which are designed to accurately classify products and packaged items by weight, placing commodity on and removing it from scale. Machinery weighs cases, bags or cartons. Specifications. Exact Weight Scale Co. (B-090)

LABELING MACHINE. 2-page data sheet describes features of dry precision labeling machine which applies labels to difficult surfaces such as aluminum, polystyrene, cellulose acetate, etc., will apply to flat, round and oval containers. Rawsons Ltd. (B-091)

COMPRESSION TESTER. 10-page, illustrated folder describes equipment designed to test various strain, stress and crush-resistance of products, boxes and containers. Specifications. Data. Testing Machines, Inc. (B-092)

COATED GLASS FABRIC. 4-page catalog folder describes the properties and features of fabrics—with heat and cold resistance, dielectric strength—for packagers in food and dairy fields, etc., also tapes with pressure-sensitive adhesives. Specifications. Dodge Fibers Corp. (B-093)

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Bags—paper, foil, film and their combination—continue to grow in popularity as packaging containers. Their almost unlimited variation in sizes and materials of construction plus built-in properties of strength and product protection is increasing their scope of application.

Pioneering new bag applications demands solutions to new problems of grease or oil penetration, water resistance, aroma and odor barriers, heat and cold stability, flexibility, etc., as well as problems of functional design. As a leading supplier of bag adhesives, Morningstar-Paisley faces these problems cooperatively *with* the bag manufacturer. Seams and bottoms must be firmly secured and supplement the protective properties of the bag materials.

To meet these exacting specifications, M-P draws upon the experience of the staffs of nine laboratories—all experts in compounding starches, water soluble gums, latex and synthetic resins, plastisols, casein, animal glue, dextrines and countless other adhesive raw materials and chemical additives.

Manufacturers packing in bags also receive this Morningstar-Paisley service for their final closure adhesives. Specialty high speed polyvinyl acetate resin adhesives suitable for bag closing machines are keeping pace with the continuing development of new bag materials.

M-P Technical Service Men know both bag production and bag sealing and packaging machinery. To take advantage of this free "extra" service, discuss your bag adhesive problems with the M-P "shirt-sleeve" salesman serving you.

MORNINGSTAR-PAISLEY, INC., 630 W. 51st St., New York 19, N.Y. and 1770 Canalport Avenue, Chicago 6, Illinois.

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use these special

KLEEN•STIK®

Low-*Tack*

Pressure-Sensitive Stocks

IF YOUR LABEL **is the kind that *should* come off . . . and come off *clean and easy* . . . be sure it's printed on the right KLEEN-STIK stock. KLEEN-STIK — pioneer and specialist in pressure-sensitive label stocks — has many special grades coated with "low-tack" adhesive that go on and come off with equal ease.**

- **Litho** No. 620-L
- **Kromekote** No. 720-K
- **Foil** No. 450-M
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- **Clear Acetate**
  2-mil No. 220-CA 5-mil No. 520-CA
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- **Colored Litho** No. 620-CL
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1934-1959 . . . 25 Years of
Pressure-Sensitive Leadership
7300 W. WILSON AVE. • CHICAGO 31, ILL.

[*Continued from page 178*]

during the next five-year period.

A sales rise to two billion aerosol units a year by 1970 has been predicted, William Simms, editor of MODERN PACKAGING *Encyclopedia*, told the aerosol group. Pressure packages are contributing many advances in the field of packaging, but fundamental techniques of packaging can make equally valuable contributions to the aerosol. A package audit can help the aerosol marketer multiply his opportunities because it will measure the effectiveness of such essentials as protection, proper labeling, display performance, retailer conveniences and consumer acceptance.

Glycols, glycol-ethers and polyglycols show promise as solvents for pharmaceuticals in aerosol formulations, particularly as substitutes for ethyl alcohol, Dr. P. A. Sanders of Du Pont's "Freon" Products Laboratory told the CSMA group. ●

Leakproof carton

[*Continued from page 89*]

machine again for filling and final carton closure.

In the automatic unit, at Findus, the bottom end is sealed and closed first, then the top is sealed after filling, all being accomplished in the same pass through the machine.

In either instance, after the carton is set up by the machine, the four open flaps are held by a fixed collar. Cover paper is fed from rolls across one open end and a heating plate seals the paper under pressure, with the thermoplastic coating flowing into flaps and corner fibres. Flaps are then folded in and locked. A similar operation closes the other end after filling. Fillers are conventional.

Consumers open the carton by pulling the end flaps from one corner, thus removing the sealed end paper at the same time.

Coatings or laminations used for resistance to moisture, fats, oils or chemicals include polyethylene for frozen vegetables and fish, wax for ice cream, other frozen vegetables and frozen meats, saran for ground coffee, Pliofilm for dehydrated milk, and aluminum foil for coffee beans and tea, plus greaseproof paper for oatmeal, pergamyn (vegetable parchment) for cake mixes and other fatty items, asphalt paper for salt. ●

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Pressure-Sensitive Stocks

MANY LABELS **are intended to *remain in place* on product or package. To make sure *your* labels stay put, specify one of KLEEN-STIK's special "high-tack" adhesive stocks—they go on easy, yet *stick tight* on any smooth, hard surface. With KLEEN-STIK, you *know* you're getting the *best* pressure-sensitive stock for the job.**

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- **Clear Acetate**
  2-mil No. 270-CA 5-mil No. 570-CA
  3-mil No. 370-CA
- **Colored Litho** No. 670-CL
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'60 Packaging Show

Packaging personnel who journey to Atlantic City in early April to visit the 29th National Packaging Exposition and Conference will face a busy schedule. Contrasted with five-day shows in the past two years, the American Management Assn. exposition this year will revert to four days (33 hrs.), with simultaneous conference sessions on the first three days, including three concurrent meetings in one morning.

The exposition will open Monday, April 4, and close Thursday, April 7. The conference will run three mornings, Monday through Wednesday. Both are scheduled for Atlantic City's newly enlarged Convention Hall, scene of the 1958 PMMI Machinery Show and of many previous AMA Packaging Expositions.

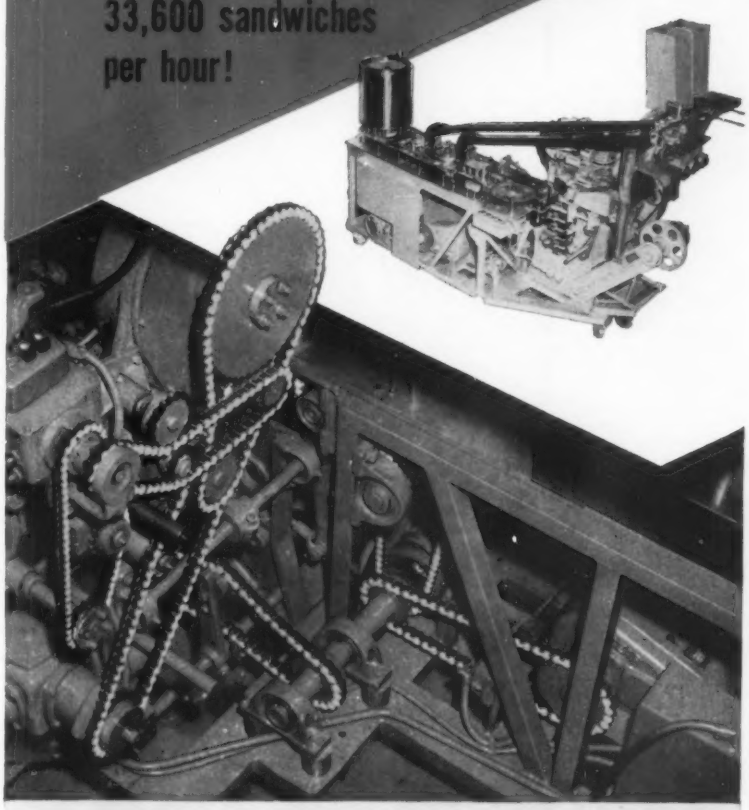
To date, 335 exhibitors have reserved show space, compared with the 376 who last year in Chicago set a record for AMA shows by occupying 146,000 sq. ft. of space, though the New York show the preceding year had an all-time high of 390 exhibitors. This year's exhibit space is expected to total 140,000 sq. ft., including the main-floor arena and lower-arena level. Attendance between 25,000 and 30,000 is predicted, compared with 27,750 last year in Chicago and a record 35,400 the previous year in New York.

Again this year, AMA will charge the $2 registration fee that, starting in 1958, has been credited with restricting attendance to visitors with a serious interest in the materials, machines, techniques and services on display. Proceeds are divided equally between a fund for research and education in packaging, and a reduction of costs for exhibitors at next year's show in Chicago.

Theme of the National Packaging Conference this year is "Packaging for Profit," with emphasis on prudent spending and saving of packaging dollars through profitable investments in materials, methods, manufacturing, distribution, research and merchandising. Most meeting discussions will look at current and future packaging progress in the light of the decade which is now starting.

The Monday morning single session will assess current challenges to corporate packaging management. Three concurrent Tuesday

DIAMOND roller chain
helps this machine produce
and package
33,600 sandwiches
per hour!



560 sandwiches every minute—made, stacked 4 to a package, wrapped and sealed—by The Lynch Corporation / Quality Machine Company combination unit. The secret is perfect synchronization and split-second timing at high operating speed...a typical example of DIAMOND Roller Chain precision performance.

Whatever your application—conveying, timing, synchronization, power transmission—you can rely on dependable, accurate DIAMOND Roller Chain for a long life of low-cost, trouble-free service.

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"Yes, Mr. Walters, I called Keystone . . . and they DO convert polyethylene as well as cellophane."

When you want "as specified" custom designed cellophane and polyethylene bags . . .

When you want "as specified" printed and converted polyethylene film, sheet, tubing, lay flat and gusseted . . .

It *pays* to deal with Keystone Packaging Service! Keystone is a stickler for accuracy. Write or call today for quotations, free bag and roll stock samples. *And design consultation.* Keystone Packaging Service, 555 Warren St., Phillipsburg, N. J.

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flexible packaging

KEYSTONE PACKAGING SERVICE
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morning panel meetings will cover package production, package research and package marketing. A single Wednesday morning session will be a doubleheader, with two panels in operation in the same meeting. One will handle package development and engineering, the other package design and merchandising. These panels will discuss packaging problems and requirements, look at the future and analyze trends reflected in the show.

Registration fees for the conference will be $10 for each session for AMA members, or $25 for the full program, and $15 for each session for non-members, or $35 for the full program. Conference registration includes admission to the show. Advance conference registrations are being accepted by the AMA, 1515 Broadway, New York 36.

The Monday conference session opens at 9:30 a.m.; the other two, at 9 a.m.; all three of the sessions close at 12:30 p.m.

The show opens each day at 10 a.m. and closes at 6 p.m. on Monday and Wednesday, 9 p.m. on Tuesday and 4 p.m. on Thursday. Rapid registration for the show is being handled by the show management, Clapp & Poliak, 341 Madison Avenue, New York 17.

Again this year, visitors' requests for literature and other material from show exhibitors will be facilitated by an offer of an "Inquiry Time Saver Plate" similar to charge-account plates. This plate, imprinted with an individual's name, title, company and address, obviates the need for filling out request forms for additional display information. The holder of the plate simply furnishes the device to the exhibitor who machine imprints the data on a literature-request form and immediately returns the plate. Plates are available without charge from Clapp & Poliak, provided the individual's name, title, company name, address, city, postal zone and state are provided in advance.

Assistance in making hotel reservations will be provided by the Housing Bureau, AMA National Packaging Exposition, Atlantic City Convention Bureau, Atlantic City. ●

New data on film heat seals

[*Continued from page 128*]

the curve shows only one peak. Therefore, the higher the sealing pressure, the more obliterated the web structure becomes and the better the seal. This is the reason why it is so difficult to obtain smooth curves and well-defined areas at around 1 kg./cm.^{2} sealing pressure (Figure 7). With one of the jaws made of softer material than steel—such as, for instance, hard rubber—one might overcome some of these effects. At 2 kg./cm.^{2} sealing pressure (Figure 8) the curves are smooth and the seals are reproducible, which means that for practical purposes, one should use at least 2 kg./cm.^{2} sealing pressure and keep within the range 1.5 and 3.5 kg. tensile force as indicated in the figures.

Two different sealing pressures were used, that is 1 and 3 kg./cm.^{2}. The tensile strengths of the seals in kg./34.5-mm. width are presented in Tables VII and VIII. The same type of rupture (A, B and C) as discussed under impulse sealing appears in constant-heat sealing and Tables IX and X show what kinds of ruptures one obtains. On correlating the type of break with tensile force one finds that at 1 kg./cm.^{2} sealing pressure the best sealing range lies between 2.5 and 3.5 kg tensile force, but at 3 kg./cm.^{2} sealing pressure this range lies between 1 and 2.5 kg. tensile force. The best sealing range for constant-heat sealing is therefore narrower than it is for impulse-heat sealing.

When increasing the sealing pressure, the best quality of seal is obtained by lower tensile strengths. These differences between impulse- and constant-heat sealing depend on the fact that in constant-heat sealing, no cooling of the film under pressure takes place. It therefore seems that the best sealing conditions for constant-heat sealing lie around 1 kg./cm.^{2} sealing pressure and within the given tensile force limits. Figures 11 and 12 show the tensile-force contours at 1 and 3 kg./cm.^{2} sealing pressures.

The tensile-force curves are in many aspects very similar to those shown in Figure 10, though, unlike the impulse-heat curves, they show

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that by increasing the temperature the peaks disappear more and more. so that when reaching the higher temperatures the curves show just one peak, like the one represented by 3 kg./cm.^{2} in Figure 10. This depends on the fact that the film is melted in quite another way in constant-heat sealing and that no cooling period is included.

Further work

Further work should be done in this field. Some of the problems which have not hitherto been very extensively dealt with are, for instance: the influence of the profile of the jaws, the influence of the cooling time and the behavior of several different kinds of films. Also the temperature and pressure ranges ought to be extended.

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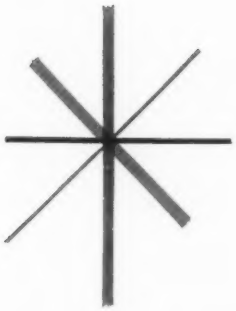
Continuous skin pack

[*Continued from page 118*]

by the additional molecular friction in the buffer itself. A 3 kw. generator is used on each card line, enabling production speeds of up to 24 packages per minute. Discharge of the completed packages is maintained by the same roller arrangement used on the folder-pack lines.

Motive force for the jigs is the same on both types of packaging machine. Longitudinal motion on both loading and return tracks is imparted by a single, double-action air cylinder that actuates the two



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rams through rod linkages. Transverse motion at either end of the machine is supplied by a second single-action air cylinder that transmits power to the two rams by cables. These arms are returned to position by weighted pulleys. In operation, the air cylinders are activated by a solenoid-controlled air valve, which is in turn motivated by impulses from limit switches tripped by the pusher arms. Speed of the packaging lines is governed both by control valves on the air-supply line and throttling valves on the exhaust lines.

A big advantage of this machine is its flexibility in speed and operation, according to Beltx. With little change-over time, jigs can be quickly changed to handle packages of different size. Company officials cite the possibility—now being explored —of making a variety of inexpensive inserts that can be fitted into standard jigs to accommodate various package sizes or shapes, including multiple compartments.

Speed also could be boosted by either increasing the number of packages that are sealed in each cycle of the electronic head or by increasing the number of jigs and loading operators.

While the minimum gauge of PVC now used by Beltx is 2 mil, company experts say this can be pared to 1 mil for light products—giving even greater economy. Also, tests indicate that products up to 1 in. thick can be enclosed in the new package with good conformation of the elastic film—a combination of advantages that should interest a great many packagers in this unusual technique. ●

Now: polystyrene film for produce

[*Continued from page 97*]

and yellow with the company's "Beauty" brand name, the film is cut off and overwrapped with conventional two-point folds. The packaged products are then packed by hand in corrugated tray shippers.

So successful has been Scafidi's packaging operation and market acceptance that the company now plans to overwrap its paperboard "boats" with polystyrene film during the next season.

At Safeway, the big California-based food chain operating more than 2,100 stores in the U. S. and Canada, the overwrapping of tomatoes in 1-mil polystyrene has spread from its original use in the firm's Washington, D. C., produce prepackaging plant to an additional seven plants handling tomatoes.

As at Scafidi, Safeway finds that most fresh produce has packaging demands different from other food products in that it deteriorates quickly when its own high moisture content is locked in. Polystyrene's ability to breathe makes it especially suitable for produce requirements, the company reports. Hence, at Safeway, too, no perforations or artificial passageways for escape of moisture are necessary.

This chain believes that the appearance of the ripe red tomatoes themselves, enhanced by the sparkle of the film, has more sales appeal than printed merchandising messages. Occasionally a small design printed on the film is used to distinguish the pack. Otherwise, all of the printed copy appears on the paperboard tray.

In all eight of Safeway's tomato-packaging plants overwrap operations are automatic except for hand loading of the tomatoes into the paperboard trays. Filled trays are placed on a conveyor leading into the standard-model overwrapper. Film feeds from roll stock and is wrapped around the tray, solvent is applied and the tray then moves through the sealing plates. Speed is about 80 trays a minute, but can be stepped up to 90 when desired. No equipment changes were required.

Butyl carbitol acetate solvent activator is reported to be the most satisfactory type for sealing this polystyrene film. It is applied to the film in the seal area by standard rollers that dip into supply reservoirs. Safeway originally thought that a strong seal could be effected using only the solvent and pressure. However, experience has shown that a small amount of heat is helpful to drive off the excess solvent. The temperature is kept at about 150 deg. F. At temperatures above 200 deg. F., the film tends to soften and build up on the heater plates, causing miswraps, Safeway reports. ●

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The bantam aerosol

[*Continued from page 86*]

for little girls to use push-button packages just like Mom—and leave Mom's alone. The company is backing this new packaging idea for national distribution with a full advertising campaign.

These are just a few of the uses for small sizes. There are many others designed for "carry-with" convenience, including Masket, a spray for bad breath, and a purse-size hair lacquer coming out soon in a ¾-oz. aerosol. Travel-size aftershave lotions are being contemplated now that the way has been paved by Yardley in standard sizes. It's possible that small aerosols will find a use in the food field for seasonings and flavorings of which only a "soupçon" is required.

Prospective users of the bantam aerosol will do well to consult suppliers of containers, valves, propellants and aerosol contract packers in studying specific applications—because it looks as though, as someone has aptly put it, "life in the future will find the use of the aerosol as commonplace as the can opener." ●

Fluorination

[*Continued from page 132*]

Toni Deep Magic plus allyl caproate, were studied. Table I summarizes the results after 28 days of testing for the pure chemicals only.

Another interesting test was conducted on a toothpaste containing methyl salicylate. Results appear in Table II.

It is yet too early to prognosticate the commercial future of fluorination. There are still many process and cost investigations before regular production can be assured. These difficulties must be weighed against new polymers and other developments. Certain it is, however, that by imparting chemical and permeability resistance, fluorination can enhance the value of polyethylene as a packaging medium.

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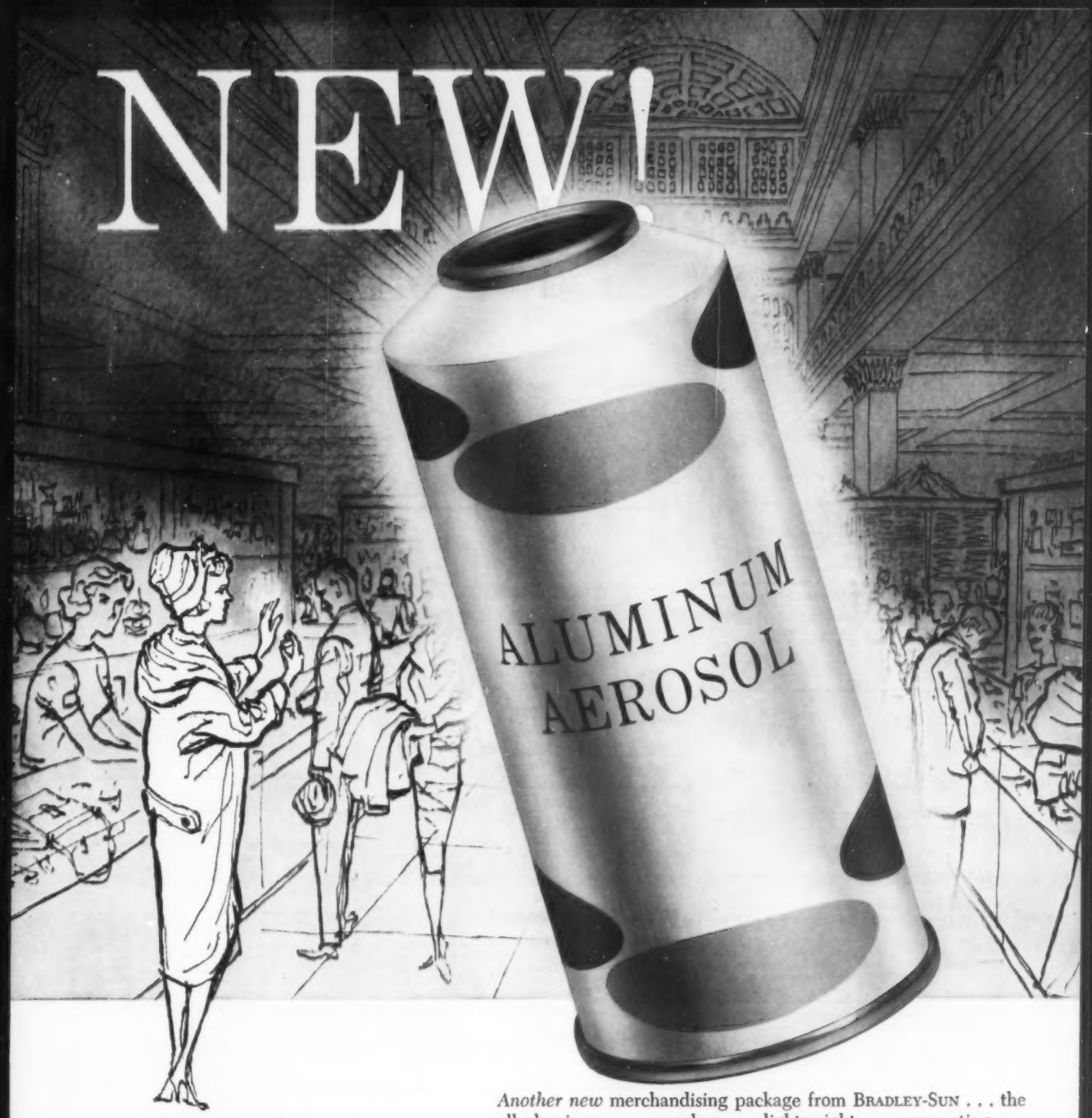

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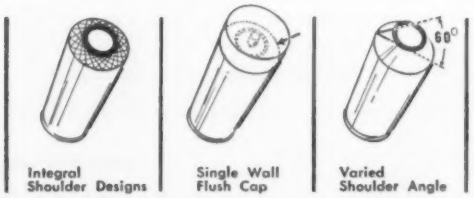

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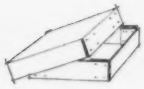

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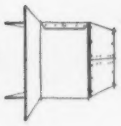

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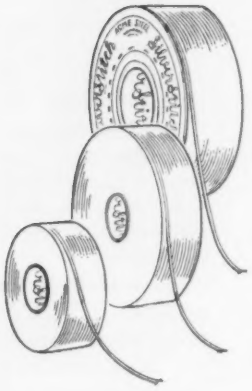

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